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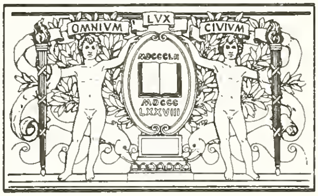

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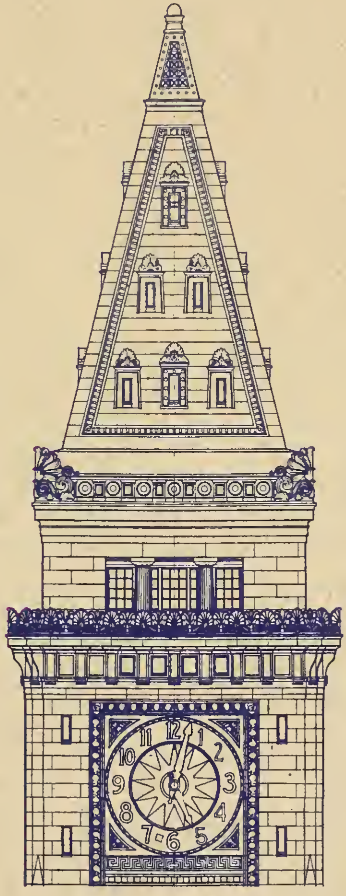
APPENDIX



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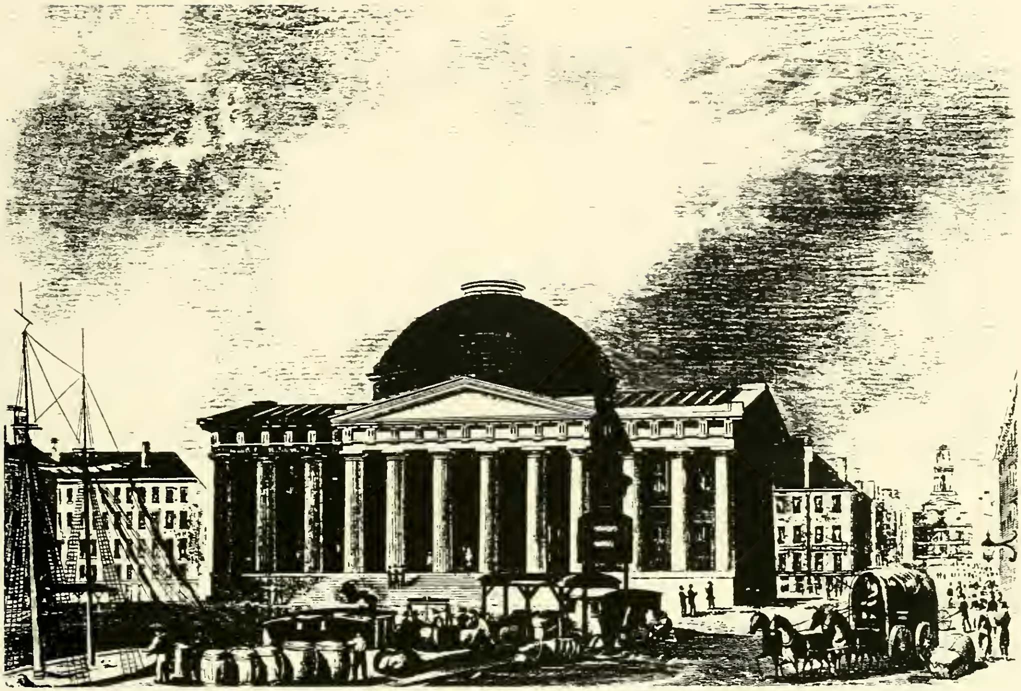
CUSTOM HOUSE TOWER ASSOCIATES



Courtesy of The Bostonian Society / Old State House

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A Proposal for
Redevelopment of the

U. S. CUSTOM HOUSE

Boston, Massachusetts

Presented to the Boston Redevelopment Authority
by
CUSTOM HOUSE TOWER ASSOCIATES

5 February 1988

Appendix

Appendix A	*Directory of the Development Team*
Appendix B	*Letters of Support for the Museum*
Appendix C	*Developer's Statement of Qualification and Financial Responsibility*
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Appendix G	*Photographs and Project Descriptions of Work by the Development Team*

APPENDIX A

CUSTOM HOUSE TOWER ASSOCIATES

Developer

TRAMMELL CROW COMPANY
in joint venture with
JAMES B. WHITE PARTNERS

Contact:
Arthur DiMartino
Trammell Crow Company
One Main Street, Suite 700
Cambridge, MA 02142
617-621-0400

James B. White
Palmer & Dodge
One Beacon Street
Boston, MA 02108
617-227-4400

Architect

DEAN TUCKER SHAW, INC.
in association with
BEYER BLINDER BELLE

Contact:
Stephen Tucker
Dean Tucker Shaw, Inc.
119 Beach Street
Boston, MA 02111
617-338-4029

John Belle
Beyer Blinder Belle
41 East 11th Street
New York, NY 10003
212-777-7800

Museum Programming

CIA MOONEY DESIGN

Contact:
Cia Mooney
33 Sleeper Street
Boston, MA 02210
617-423-7318

Project Management

STANLEY H. DURLACHER

Contact:
Stanley W. Durlacher
Trammell Crow Company
186 South Street
Boston, MA 02111
617-482-2375

Brokerage & Marketing

AGABABIAN ASSOCIATES

Contact:
Ronald H. Agababian
Agababian Associates
22 Batterymarch Street
Boston, MA 02109
617-423-0900

Legal Counsel

PALMER & DODGE
and
DiCARA, SELIG, SAWYER & HOLT

Contact:
James B. White
Palmer & Dodge
One Beacon Street
Boston, MA 02108
617-227-4400

Lawrence S. DiCara
Three Center Plaza
Boston, MA 02108
617-523-1800

Mechanical Engineers **R. G. Vanderweil Engineers**

Contact:
Bruce MacRitchie, P.E.
266 Summer Street
Boston, MA 02210
617-423-7423

Structural Engineers **LeMessurier Consultants**

Contact:
Rolf G. Andersson, P.E.
1033 Mass. Ave.
Cambridge, MA 02238
617-868-1200

Traffic Consultants **Vanasse Hangen Brustlin, Inc.**

Contact:
Ray Niedowski
60 Birmingham Parkway
Boston, MA 02135
617-783-7000

Communications Consultant **Lashley & Company**

Contact:
Averil Lashley
224 Clarendon Street
Boston, MA 02116
617-437-7878

APPENDIX B

THE KENDALL WHALING MUSEUM
27 Everett Street P.O. Box 297
Sharon, Massachusetts 02067

Stuart M. Frank, Director
Telephone: (617) 784-5642

3 February 1988

Attn.: Dina Montgomery
Trammell Crow Company
186 South Street, 1st Floor
Boston, Massachusetts 02111

Dear Ms. Montgomery:

This letter betokens our interest in, and our support in principle of, your organization's hope to establish, at an appropriate downtown site, a museum of Boston history. The old Boston Customs House would appear to be a suitable facility for conversion to this use, as it is itself central to Boston's role as a commercial center and port, and is centrally located in an area convenient to tourism and to regular visitation by those who live and work in Boston.

It is remarkable that Boston does not already have a museum devoted to Boston history, as Boston is one of the oldest, largest, and most culturally diverse metropolitan centers in the nation. Certainly the story of The Hub is of sufficient local, regional, and national interest, and the myriad contributions of Boston to the cultural, social and economic life of the nation sufficiently substantial, to warrant such a facility, wherein artworks, artifacts, and memorabilia of an important heritage can be exhibited, interpreted, and enjoyed.

Just as certainly, the Kendall Whaling Museum is potentially interested in participating in the exhibitions, programs, and outreach services of such a museum, and, commensurate with its own regional, national, and international collections and programs, would welcome such an institution into the already rich and diverse galaxy of museums in the Boston metropolitan area.

Sincerely,

Stuart M. Frank, Ph.D.
Director, The Kendall Whaling Museum
President, Council of American Maritime Museums
(Member Institution, Museums of Boston)

USS CONSTITUTION MUSEUM

Richard C. Wheeler
Director

27 January 1988

Custom House Tower Associates
c/o James B. White
Palmer & Dodge
One Beacon Street - 23rd Floor
Boston, Massachusetts 02108

Dear Mr. White:

The proposed Custom House Museum of Boston has the support of USS Constitution Museum.

The missing element of Boston's revitalized Quincy Market - Faneuil Hall area is an education center. The proposed museum would fill that gap.

Since so much of Boston's history centers on the maritime sector and since "Old Ironsides" is the jewel in that crown, you can count on our desire to become actively involved in the planning process of the proposed museum if it becomes a reality.

Sincerely,

Richard C. Wheeler

RCW/mm

Box 1812 • Boston, MA 02129 • (617) 426-1812

Boston University

The Center for Democracy
1101 15th Street, N.W.
Suite 505
Washington, D.C. 20005
202/429-9141

January 25, 1988

James White, Esquire
Palmer & Dodge
1 Beacon Street
Boston, Massachusetts 02108

Dear Mr. White,

On behalf of the Board of Directors and friends of the Center for Democracy of Boston University [we enclose a list of our Directors and a pamphlet on our past and current programs], we write to support strongly--with the single modification described herein--your proposal for use of the Rotunda portion of the Boston Customs House. We have reviewed your proposal and several others called to our attention and, as you know, met with various of your colleagues over the past year for intensive discussions.

It is our belief that the most appropriate use of the space indicated would be to develop a new Museum of the City of Boston, incorporating into the Rotunda portion of this structure a related national and international component to be called "Democracy Hall." One major portion of the "Democracy Hall" component would portray the various landmarks of the American democratic tradition within Boston and the surrounding area, providing descriptions of their importance and directions to the site itself. By integrating the manifold attractions of Boston to resident and tourist, schoolchild or senior citizen alike, such a component of the overall Boston museum would demonstrate the critical significance of the city to the evolution of American democracy from the seventeenth century to the present.

The presentation materials we have seen from your group are most impressive. We believe that the museum could only be enhanced by use of a portion of its space for exhibits such as the above described or by others such as one dealing with the Customs Service and global trade in Boston's history, or one offered by President Aquino of the Philippines for inclusion in Democracy Hall when she visited Boston at Mayor Flynn's invitation in 1986.

To facilitate creation of the Boston museum with its Democracy Hall component, The Center for Democracy is prepared to work with your Board of Advisors and the Mayor's office to focus attention nationally and internationally on the importance of this enterprise. We propose the following:

1. Coordination of efforts to raise funding from national and international foundations and corporations for the entire project with a substantial seven figure goal.

2. Mobilization of support for a congressional charter and tangible congressional support for the City and the Customs House's developers in this historic venture.

Our view of the best approach to utilizing this unique building space is a simple one: We believe Democracy Hall and the Museum of the City of Boston could interrelate as comfortably as a star diamond in a grandly-jeweled setting.

We recognize now that, although the first proposals to incorporate Democracy Hall in the Customs House came from City Hall itself at a time when the Center's Directors had been seeking a Washington location, an even more appropriate use of the museum space would be to integrate the national and international exhibits of Democracy Hall--should it be placed in the Customs House--into the framework of the proposed Museum of the City of Boston. We are prepared to enter into detailed commitments with both the Mayor's office and your colleagues to help make the entire project a reality. The benefits to the people of Boston will a centerpiece for visitors, a major tourist attraction, and a handsome home for those business people who would occupy the building space atop the Rotunda.

For that reason, we would like to continue discussions with your colleagues and with the appropriate officials of Boston, should the City select your group to develop the Customs House. Already, as we have indicated, the Center has received contributions and conditional pledges amounting to several hundred thousand dollars earmarked specifically for development of Democracy Hall, preferably in the Customs House. We are prepared to commit those funds--and others expected into the millions--to developing the building, if Democracy Hall is incorporated into its plan.

We look forward to hearing from you and, as indicated, wish you the best with your proposal.

Sincerely yours,

Peter G. Kelly
Chairman of the Board

Allen Weinst

Allen Weinstein
President of the Center

John Ryan

John Ryan
Chairman, Center Board
Committee for Democracy Hall

cc: Mayor Raymond L. Flynn
Senator John F. Kerry
Stanley Durlacher
Michael A. Gangemi
Larry diCara

John Larkin Thompson
100 Summer Street, 14 Floor
Boston, Massachusetts 02110

January 28, 1988

Custom House Tower Associates
c/o James B. White
Palmer & Dodge
One Beacon Street
Boston, MA 02108

Gentlemen:

As my presence on your Museum Advisory Board indicates, I support the concept of a Museum of the City of Boston at the Custom House. The building itself is very much a part of the City history and will provide a fitting location where Bostonians and others can learn about their past and look forward to their future.

Very truly yours,

John Larkin Thompson

JLT:dmw

USTrust

Alan R. Morse, Jr.
Chairman of the Board

January 20, 1988

Custom House Tower Associates
c/o James B. White
Palmer & Dodge
One Beacon Street - 23rd Floor
Boston, MA 02108

Gentlemen:

We have received your plan to create an exciting new Museum of the City of Boston in the Custom House. We endorse this proposal since it provides a fitting location for citizens of our City and others to learn about its history, its peoples and its neighborhoods.

Sincerely yours,

ARM:dlc

United States Trust Company
40 Court Street
Boston, Massachusetts 02108
(617) 726-7207

The Gillette Company
Prudential Tower Building
Boston, Massachusetts 02199
(617) 421-7868

Joseph E. Mullaney
Senior Vice President and General Counsel

February 3, 1988

Custom House Tower Associates
C/o James B. White, Esq.
Palmer & Dodge
One Beacon Street - 23rd Floor
Boston, MA 02108

Dear Jim:

As you know I have been involved personally on the Advisory Board for a Museum of the City of Boston in the Custom House. I think the concept of a Museum located at the Custom House is excellent. I have been impressed by the people you have been able to enlist on the Advisory Board and the ideas and plans they have generated. This Museum will provide an exciting place for Bostonians and others to learn about their history and neighborhoods.

Very truly yours,

JEM/11

The Berman Company, Inc.

186 South Street
Boston
Massachusetts
02111-2701

Telephone
617-338-0783

4 February 1988

Mr. James B. White, Esq.
Palmer & Dodge
One Beacon Street
Boston, Massachusetts 02109

re: Custom House Tower Associates Museum of The City of Boston Proposal

Dear Mr. White:

I have recently become familiar with the Custom House Museum of The City of Boston proposal. The purpose of this letter is to add my unqualified support for this effort.

My family came to Boston in the 1870's. The history of my ancestors closely paralells the history of Boston's ethnic groups movements within the city, changing residential patterns, transportation access and industrial history. Part of what makes Boston the vibrant city it continues to be is the continuing sense of place so many of its inhabitants share.

I currently own a number of buildings in the South Station area. This is the same area where my family toiled for many years in the leather business. On a daily basis I interact with vaious city agencies and departments dealing with issues of land use, building density and zoning issues. Uniquely in this area of the city the streets and buildings I am involved with are those my family has worked in and around for over 100 years. It is this sense of the continuing history of Boston which I enjoy, and which I believe the Museum of The City of Boston will properly highlight.

The history of any great city is an intricate fabric woven from many individual threads of human endeavor. This museum's interest in displaying how the threads of past and present lives, goals, successes, failures, technical and transportation advances, political trends, topographical features and other external forces is, in my mind, precisely what gives Boston the dynamism so many large cities seem to lack.

Many of the features of Boston's past, present and future, which this Museum intends to spotlight, are ones studied elsewhere in isolation. The appeal of this proposal is that it pulls the many threads together into single presentations.

Finally, this use of the Custom House itself is one I applaud. For Bostonians by choice, and for those who are here by accident of birth, the locating of this museum downtown will not only envigorate this building, but will also enhance the museum itself. Rather tahn being isolated from its subject matter, this museum will help all who are exposed to its efforts to appreciate and focus upon the continuing history of the City of Boston.

I am impressed and delighted with this proposal and hope it will become a reality at the restored Custom House.

Very truly yours,

Roger L. Berman

Roger L. Berman

APPENDIX C

APPENDIX C

PART II

HUD-6004
(9-69)

REDEVELOPER'S STATEMENT OF QUALIFICATIONS AND FINANCIAL RESPONSIBILITY

(For Confidential Official Use of the Local Public Agency and the Department of Housing and Urban Development. Do Not Transmit to HUD Unless Requested or Item 8b is Answered "Yes.")

1. a. Name of Redeveloper: Custom House Tower Associates

   b. Address and ZIP Code of Redeveloper: c/o Trammell Crow Company
   One Main St., Suite 700, Cambridge, MA 02142

2. The land on which the Redeveloper proposes to enter into a contract for, or understanding with respect to, the purchase or lease of land from

   Boston Redevelopment Authority
   (Name of Local Public Agency)

   in Downtown & Waterfront Urban Renewal Area/Custom House District
   (Name of Urban Renewal or Redevelopment Project Area)

   in the City of Boston, State of Massachusetts, is described as follows:

   U.S. Custom House
   State Street

3. Is the Redeveloper a subsidiary of or affiliated with any other corporation or corporations or any other firm or firms? ☐ YES ☒ NO
   If Yes, list each such corporation or firm by name and address, specify its relationship to the Redeveloper, and identify the officers and directors or trustees common to the Redeveloper and such other corporation or firm. Custom House Tower Associates is a joint venture. Its joint venturers are as elsewhere herein set forth.

4. a. The financial condition of the Redeveloper, as of * , 19____, is as reflected in the attached financial statement.
   (NOTE: Attach to this statement a certified financial statement showing the assets and the liabilities, *including contingent liabilities*, fully itemized in accordance with accepted accounting standards and based on a proper audit. If the date of the certified financial statement precedes the date of this submission by more than six months, also attach an interim balance sheet not more than 60 days old.)

   b. Name and address of auditor or public accountant who performed the audit on which said financial statement is based: * No financial statements exist since the joint venture has been created to pursue only this project. One partner, Trammell Crow Company, is a private partnership with assets of over $13 billion. (cont'd *)

5. If funds for the development of the land are to be obtained from sources other than the Redeveloper's own funds, a statement of the Redeveloper's plan for financing the acquisition and development of the land:
   All financing for this project will be equity financing provided by a joint venture partner. Please see attached letter indicating an interest in providing such financing.

   *(cont'd): Appropriate additional financial data will be supplied upon request.

a. If the Redeveloper is a corporation, the officers, directors or trustees, and each stockholder owning more than 10% of any class of stock[1]

b. If the Redeveloper is a nonprofit or charitable institution or corporation, the members who constitute the board of trustees or board of directors or similar governing body.

c. If the Redeveloper is a partnership, each partner, whether a general or limited partner, and either the percent of interest or a description of the character and extent of interest.

d. If the Redeveloper is a business association or a joint venture, each participant and either the percent of interest or a description of the character and extent of interest.

e. If the Redeveloper is some other entity, the officers, the members of the governing body, and each person having an interest of more than 10%. *

NAME, ADDRESS, AND ZIP CODE

POSITION TITLE *(If any)* AND PERCENT OF INTEREST OR DESCRIPTION OF CHARACTER AND EXTENT OF INTEREST

* Participating joint venturers presently are:
Trammell Crow Company
James B. White Partners.

Together these venturers hold a 100% interest in Custom House Tower Associates. Each interest is a joint venturer interest with no special privileges not shared by the other joint venturer.

6. Name, address, and nature and extent of interest of each person or entity *(not named in response to Item 5)* who has a beneficial interest in any of the shareholders or investors named in response to Item 5 which gives such person or entity more than a computed 10% interest in the Redeveloper *(for example, more than 20% of the stock in a corporation which holds 50% of the stock of the Redeveloper; or more than 50% of the stock in a corporation which holds 20% of the stock of the Redeveloper)*:

NAME, ADDRESS, AND ZIP CODE

DESCRIPTION OF CHARACTER AND EXTENT OF INTEREST

At the present time none of the joint venturers has more than a 10% interest in the project.

7. Names *(if not given above)* of officers and directors or trustees of any corporation or firm listed under Item 5 or Item 6 above:

For purposes of this disclosure statement, Arthur DiMartino has been treated as the responsible principal of the Trammell Crow Company.

B. RESIDENTIAL REDEVELOPMENT OR REHABILITATION

(The Redeveloper is to furnish the following information, but *only* if land is to be redeveloped or rehabilitated in whole or in part for *residential* purposes.)

---

[1] If a corporation is required to file periodic reports with the Federal Securities and Exchange Commission under Section 13 of the Securities Exchange Act of 1934, so state under this Item 5. In such case, the information referred to in this Item 5 and in Items 6 and 7 is not required to be furnished.

1. State ~~the~~ Redeveloper's estimates, exclusive of payment for the land, for:

   a. Total cost of any residential redevelopment. . . . . $

   b. Cost per dwelling unit of any residential redevelopment. . . . . $

   c. Total cost of any residential rehabilitation . . . . $

   d. Cost per dwelling unit of any residential rehabilitation . . . . $

2. a. State the Redeveloper's estimate of the average monthly rental *(if to be rented)* or average sale price *(if to be sold)* for each type and size of dwelling unit involved in such redevelopment or rehabilitation:

TYPE AND SIZE OF DWELLING UNIT	ESTIMATED AVERAGE MONTHLY RENTAL	ESTIMATED AVERAGE SALE PRICE
	$	$

   b. State the utilities and parking facilities, if any, included in the foregoing estimates of rentals:

   c. State equipment, such as refrigerators, washing machines, air conditioners, if any, included in the foregoing estimates of sales prices:

CERTIFICATION

I (We)[1] Arthur DiMartino and James B. White

certify that this Redeveloper's Statement for Public Disclosure is true and correct to the best of my (our) knowled and belief.[2]

Dated: February 5, 1988

Signature

Arthur DiMartino, Partner
Title

c/o Trammell Crow Company
One Main St., Suite 700, Cambridge, MA 02142
Address and ZIP Code

Dated: February 5, 1988

James B White
Signature

James B. White, Partner
Title

c/o Palmer & Dodge
One Beacon St., Boston, MA 02108
Address and ZIP Code

---

[1] If the Redeveloper is an individual, this statement should be signed by such individual; if a partnership, by one of the partners; if a corporation or other entity, by one of its chief officers having knowledge of the facts required by this statement.

[2] Penalty for False Certification: Section 1001, Title 18, of the U.S. Code, provides a fine of not more than $10,000 or impris ment of not more than five years, or both, for knowingly and willfully making or using any false writing or document, knowin the same to contain any false, fictitious or fraudulent statement or entry in a matter within the jurisdiction of any Department of the United States.

DISCLOSURE STATEMENT CONCERNING BENEFICIAL INTEREST

REQUIRED BY SECTION 40J OF CHAPTER 7 OF THE GENERAL LAWS

(1) Location: ______________________________

(2) Grantor or Lessor: ______________________________

(3) Grantee or Lessee: ______________________________

(4) I hereby state, under the penalties of perjury, that the true names and addresses of all persons who have or will have a direct or indirect beneficial interest in the above listed property are listed below in compliance with the provisions of Section 40J of Chapter 7 of the General Laws (see attached Statute).

NAME AND RESIDENCE OF ALL PERSONS WITH SAID BENEFICIAL INTEREST:

Ultimate beneficial interests in Custom House Tower Associates are not known. This form will be timely completed and executed on behalf of the redeveloper.

(5) The undersigned also acknowledges and states that none of the above listed individuals is an official elected to public office in the Commonwealth of Massachusetts, nor is an employee of the State Department of Capitol Planning and Operations.

SIGNED under the penalties of perjury.

Signed: ______________________________

Date: ______________________________

APPENDIX D

PART I

REDEVELOPER'S STATEMENT FOR PUBLIC DISCLOSURE[1]

A. REDEVELOPER AND LAND

1. a. Name of Redeveloper: Custom House Tower Associates

   b. Address and ZIP Code of Redeveloper: c/o Trammell Crow Company
   One Main Street Suite 700
   Cambridge, MA 02142

   c. IRS Number of Redeveloper: TBA

2. The land on which the Redeveloper proposes to enter into a contract for, or understanding with respect the purchase or lease of land from

   Boston Redevelopment Authority
   (Name of Local Public Agency)

   in Downtown Waterfront Urban Renewal Area/Custom House District
   (Name of Urban Renewal or Redevelopment Project Area)

   in the City of Boston, State of Massachusetts, is described as follows[2]

   U.S. Custom House
   State Street

3. If the Redeveloper is not an individual doing business under his own name, the Redeveloper has the status indicated below and is organized or operating under the laws of Massachusetts

   ☐ A corporation.

   ☐ A nonprofit or charitable institution or corporation.

   ☐ A partnership known as

   ☒ A business association or a joint venture known as Custom House Tower Associates

   ☐ A Federal, State, or local government or instrumentality thereof.

   ☐ Other *(explain)*

4. If the Redeveloper is not an individual or a government agency or instrumentality, give date of organization
   February 12, 1986

5. Names, addresses, title of position (if any), and nature and extent of the interest of the officers and principal members shareholders, and investors of the Redeveloper, other than a government agency or instrumentality, are set forth as follows:
   Trammell Crow Company Arthur DiMartino, General Partner
   James B. White Partners; James B. White, General Partner

---

[1] If space on this form is inadequate for any requested information, it should be furnished on an attached page which is refer to under the appropriate numbered item on the form.

[2] Any convenient means of identifying the land (such as block and lot numbers or street boundaries) is sufficient. A descrip tion by metes and bounds or other technical description is acceptable, but not required.

6. Sources and amount of cash available to Redeveloper to meet equity requirements of the proposed undertaking:

a. In banks: All financing required will be provided by a Joint Venture Partner. Please see attached letter indicating an interest in providing such financing.

NAME, ADDRESS, AND ZIP CODE OF BANK	AMOUNT
	$

b. By loans from affiliated or associated corporations or firms:

NAME, ADDRESS, AND ZIP CODE OF SOURCE	AMOUNT
	$

c. By sale of readily salable assets:

DESCRIPTION	MARKET VALUE	MORTGAGES OR LIENS
	$	$

7. Names and addresses of bank references:

Shawmut National Bank, Anthony Valence
First National Bank of Boston, Edwin B. Morris, III
Bank of New England, Joseph Smith

8. a. Has the Redeveloper or *(if any)* the parent corporation, or any subsidiary or affiliated corporation of the Redeveloper or said parent corporation, or any of the Redeveloper's officers or principal members, shareholders or investors, or other interested parties (as listed in the responses to Items 5,6, and 7 of the *Redeveloper's Statement for Public Disclosure* and referred to herein as "principals of the Redeveloper") been adjudged bankrupt, either voluntary or involuntary, within the past 10 years? ☐ YES ☒ NO

If Yes, give date, place, and under what name.

b. Has the Redeveloper or anyone referred to above as "principals of the Redeveloper" been indicted for or convicted of any felony within the past 10 years? ☐ YES ☒ NO

If Yes, give for each case (1) date, (2) charge, (3) place, (4) Court, and (5) action taken. Attach any explanation deemed necessary.

9. a. Undertakings, comparable to the proposed redevelopment work, which have been completed by the Redeveloper or any of the principals of the Redeveloper, including identification and brief description of each project and date of completion:

The Boston Design Center was rehabilitated by the Dallas Market Center Company, an affiliate of the Trammell Crow Company. The Project Manager of the redevelopment work on the Custom House served in the same role on the Boston Design Center and on the redevelopment of Commonwealth Pier for Fidelity Management & Research Corp.

Beyer Blinder Belle, members of our architectural team, were the lead architects for the renovation of Ellis Island in New York Harbor.

b. If the Redeveloper or any of the principals of the Redeveloper has ever been an employee, in a supervisory capacity, for construction contractor or builder on undertakings comparable to the proposed redevelopment work, name of such employee, name and address of employer, title of position, and brief description of work:

Neither the Redeveloper nor any principal of it has been so employed. A member of the Redeveloper's team, Stanley Durlacher, has been employed as project manager on the rehabilitation of Commonwealth Pier and Boston Design Center, both in Boston.

10. Other federally aided urban renewal projects under Title I of the Housing Act of 1949, as amended, in which the Redeveloper or any of the principals of the Redeveloper is or has been the redeveloper, or a stockholder, officer, director or trustee, or partner of such a redeveloper:

11. If the Redeveloper or a parent corporation, a subsidiary, an affiliate, or a principal of the Redeveloper is to participate in the development of the land as a construction contractor or builder:

No construction contractor has yet been selected.

a. Name and address of such contractor or builder:

b. Has such contractor or builder within the last 10 years ever failed to qualify as a responsible bidder, refused to enter into a contract after an award has been made, or failed to complete a construction or development contract? ☐ YES ☒ NO
If Yes, explain:

c. Total amount of construction or development work performed by such contractor or builder during the last three years: $ ______________.

General description of such work:

d. Construction contracts or developments now being performed by such contractor or builder:

IDENTIFICATION OF CONTRACT OR DEVELOPMENT	LOCATION	AMOUNT	DATE TO BE COMPLETED
		$	

e. Outstanding construction-contract bids of such contractor or builder:

AWARDING AGENCY	AMOUNT	DATE OPENED
	$	

12. Brief statement respecting equipment, experience, financial capacity, and other resources available to such contractor or builder for the performance of the work involved in the redevelopment of the land, specifying particularly the qualifications of the personnel, the nature of the equipment, and the general experience of the contractor:

N/A

13. a. Does any member of the governing body of the Local Public Agency to which the accompanying bid or proposal is being made or any officer or employee of the Local Public Agency who exercises any functions or responsibilities in connection with the carrying out of the project under which the land covered by the Redeveloper's proposal is being made available, have any direct or indirect personal interest in the Redeveloper or in the redevelopment or rehabilitation of the property upon the basis of such proposal? ☐ YES ☒ NO

If Yes, explain.

b. Does any member of the governing body of the locality in which the Urban Renewal Area is situated or any other public official of the locality, who exercises any functions or responsibilities in the review or approval of the carrying out of the project under which the land covered by the Redeveloper's proposal is being made available, have any direct or indirect personal interest in the Redeveloper or in the redevelopment or rehabilitation of the property upon the basis of such proposal? ☐ YES ☒ NO

If Yes, explain.

14. Statements and other evidence of the Redeveloper's qualifications and financial responsibility *(other than the financial statement referred to in Item 4a)* are attached hereto and hereby made a part hereof as follows:
See full submission materials submitted by Custom House Tower Associates,of which this disclosure statement is a part.

CERTIFICATION

I (We)[1] Arthur DiMartino James B. White

certify that this Redeveloper's Statement of Qualifications and Financial Responsibility and the attached evidence of the Redeveloper's qualifications and financial responsibility, including financial statements, are true and correct to the best of my (our) knowledge and belief.[2]

Dated: February 5, 1988

Arthur DiMartino
Signature

Arthur DiMartino/Partner
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Dated: February 5, 1988

James B. White
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James B. White/Partner
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---

[1] If the Redeveloper is a corporation, this statement should be signed by the President and Secretary of the corporation; if an individual, by such individual; if a partnership, by one of the partners; if an entity not having a president and secretary, by one of its chief officers having knowledge of the financial status and qualifications of the Redeveloper..

[2] Penalty for False Certification: Section 1001, Title 18, of the U.S. Code, provides a fine of not more than $10,000 or imprisonment of not more than five years, or both, for knowingly and willfully making or using any false writing or document, knowing the same to contain any false, fictitious or fraudulent statement or entry in a matter within the jurisdiction of any Department

APPENDIX E

91-1012

TRANSPORTATION ACCESS PLAN

Custom House Tower
Redevelopment for
Custom House Tower Associates
Boston, Massachusetts

Vanasse Hangen Brustlin, Inc.
February, 1988

TRANSPORTATION ACCESS PLAN
CUSTOM HOUSE REDEVELOPMENT
BOSTON, MASSACHUSETTS

prepared for

CUSTOM HOUSE TOWER ASSOCIATES

February 1988

by

VANASSE HANGEN BRUSTLIN, INC.
Consulting Engineers & Planners
60 Birmingham Parkway
Boston, MA 02135

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INTRODUCTION

This report describes existing traffic-related conditions in the project study area, estimates the impact of the development in terms of vehicle, transit and pedestrian trips to the site, and provides an analysis of the study area under existing and future (1990) conditions. As a benchmark, it provides an analysis of conditions in the forecast year without the Custom House redevelopment but with other projects currently under construction or approved for development.

SUMMARY OF FINDINGS

The analysis contained herein suggests that the Custom House redevelopment will have no significant adverse impact on the area's transportation-related infrastructure. The project will generate about 41 and 47 additional trips on area roadways in both the morning and evening peak hours, respectively. This additional traffic will change the level of service at only two study area locations in the PM peak hour (none during the AM peak), and these change only marginally. These impacts result from comparison of the project with existing conditions. If compared to conditions in effect during use of the Custom House by the Federal Government through early 1987, the impacts are negligible.

The proposed development is conveniently located near all rapid transit lines and commuter rail lines, and numerous express bus routes. The project is expected to generate 274 new transit trips daily. Approximately 27 new trips are projected for the morning peak hour, and 42 new trips are projected for the evening peak hour. When distributed to the various rapid transit lines, these new peak-hour transit trips will contribute less than one-tenth of one percent of ridership at peak load points on the system.

When complete, the Custom House project will provide no on-site parking facilities. The redevelopment, if approved as envisioned by Custom House Tower Associates (CHTA) in the Urban Design section of the BRA redevelopment proposal, will result in the elimination of 18 metered spaces on India Street and McKinley Square. The developer believes that the area surrounding the base of this historic structure is not an appropriate place for parking. Analysis indicates that the long-term (all day) commuter parking demand associated with the project will be 66 spaces. Short-term, non-employee demand is expected to be 25 spaces.

Finally, the report includes a proposed Mitigation Program which identifies actions to reduce even the small impact of the proposed development. Included in the program are commitments by CHTA to take steps to reduce and better manage vehicular trip generation to the site and to design access to the building in order to minimize impacts on adjacent streets. Trip reduction efforts include measures to promote ridesharing and transit use, to encourage alternative work schedules, to restrict truck deliveries to non-peak hours, and to provide administrative support for trip reduction/management efforts.

THE CUSTOM HOUSE REDEVELOPMENT PROJECT

The proposed development will consist of 89,000 square feet of office development and 15,000 square feet of museum space. Pedestrian plazas at the base of the building are also planned on India Street and McKinley Square between State and Central Streets. Table 1 summarizes the proposed redevelopment program. The Custom House site encompasses the entire block bounded by State Street, India Street, McKinley Square, and Central Street. Under its former use, the Custom House contained about 75,000 square feet of government office space.

TABLE 1
PROPOSED REDEVELOPMENT PROGRAM

Use	Size (square feet)
Office	89,000
Museum	15,000
Total	104,000

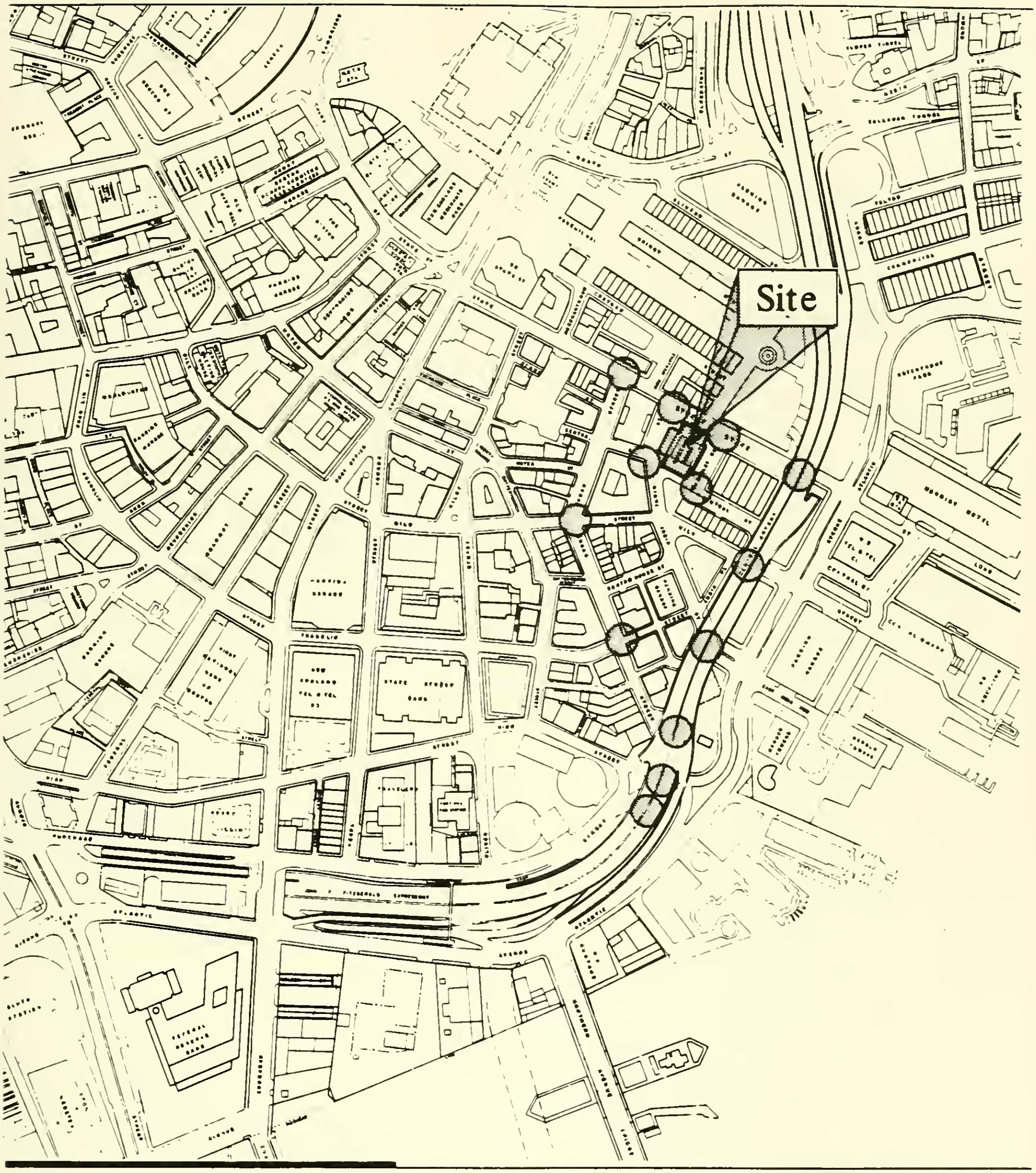
STUDY AREA

The study area defined for this project includes 13 intersections within a perimeter bounded by the Surface Road to the east, State Street on the north, and Broad Street on the west and south. The study area is illustrated in Figure 1.

Public transportation in the area of the project is well developed and utilized. The MBTA's four rapid transit lines may be directly accessed from five stations within 2,500 feet of the site, the closest being the Aquarium (Blue Line) and the State Street (Orange and Blue Lines) stations. Commuter rail service from South Station, commuter boats, and express buses to the north, south and west are all accessible within one-half mile of the site.

STUDY METHODOLOGY

The transportation study was conducted in three distinct phases. Phase I involved inventorying the existing conditions and travel demand characteristics in the area. The inventory included researching previous transportation reports as well as conducting new observations of the area travel demands. Observations of traffic volumes were conducted during the morning and evening peak periods at key intersections serving the site. In



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Site Location and Study Intersections

LEGEND:

- ▨ Site
- ○ Intersection Study Location

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Fig. 1

addition, transit line performance and ridership data were researched from MBTA files.

Phase II of the study built upon the data base in Phase I and established the framework for evaluating the transportation impacts of the proposed project. In this phase, travel demand forecasts for the project were assessed along with forecasted demands created by other future area developments. An analysis year of 1990 was established based on projected full occupancy of the proposed development.

Phase III, the final study phase, included evaluation of the impacts of the project on the transportation and pedestrian system and identification of measures to mitigate any adverse impacts. Included within this effort was the development of a Transportation Mitigation and Monitoring Program for the proposed redevelopment.

EXISTING CONDITIONS

ROADWAY NETWORK

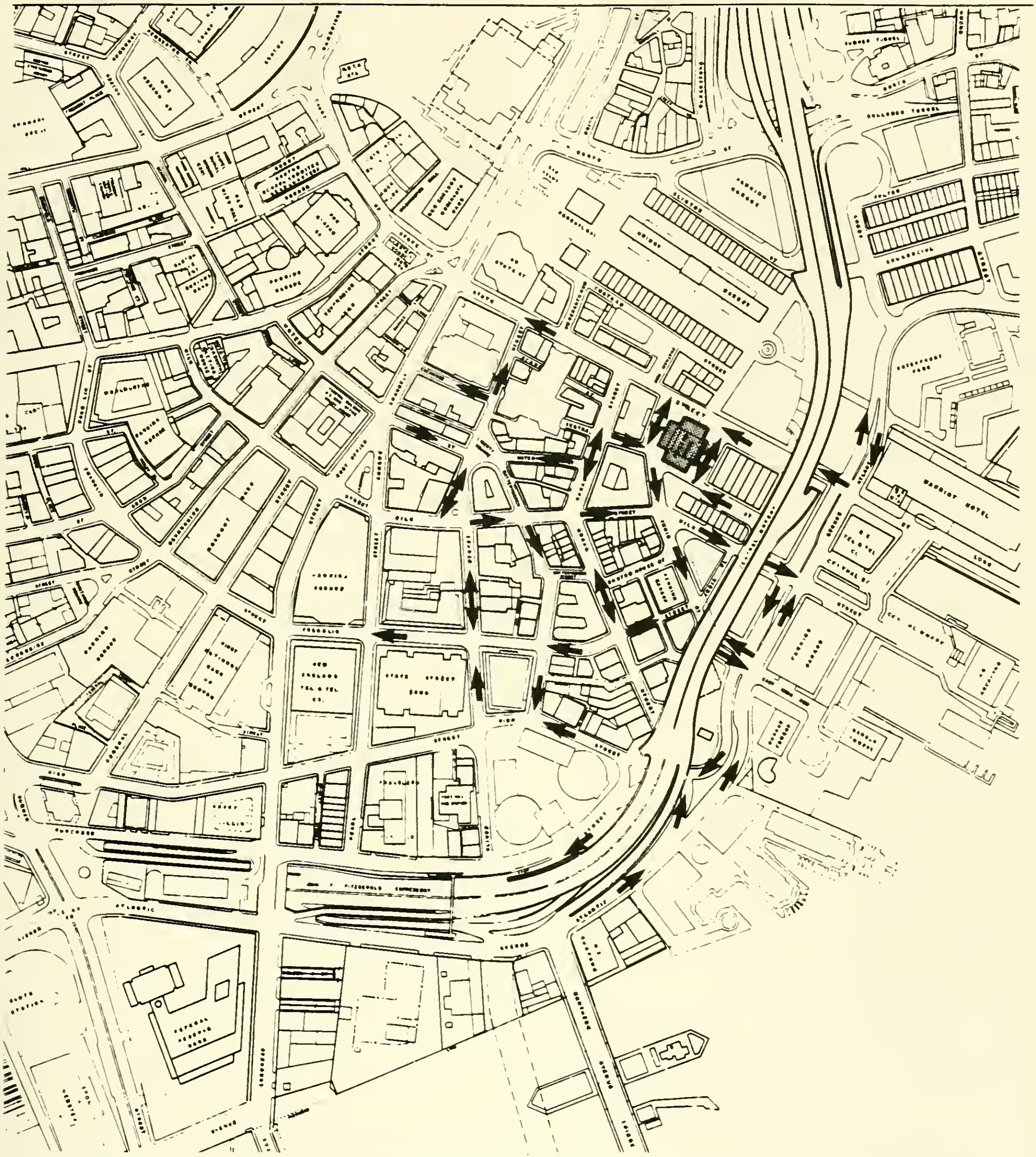
In addition to State Street, roadways in the area which will provide access to the immediate site include India Street, McKinley Square, and Central Street. Access to and from the regional highway system is provided by the Surface Artery and State Street. Figure 2 illustrates the roadway circulation pattern now existing in the area. The following provides a brief summary of roadway characteristics:

- Surface Artery - a major north/south artery east of the site running under the elevated Central Artery. It is a divided roadway providing two travel lanes and one parking lane in each direction.

- State Street - a major connector between the Surface Artery and the northern Central Business District (CBD)/ southern Government Center area. This 32-foot roadway (average width) is one-way westbound.

- India Street - a one-way street from State Street at the redevelopment site to the Surface Artery.

- Broad Street - a low-volume roadway which serves a series of retail, restaurant and office uses with some warehousing between the Surface Artery and State Street. The roadway, which is generally about 50 feet in width, carries one moving lane in each direction with parking permitted on both sites. Traffic on this roadway has the right-of-way at all intersecting side streets except at State Street (uncontrolled) and at the Surface Artery (traffic signal control).



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Study Area Circulation

LEGEND:

▨ Site

← Direction of Travel

Fig. 2

- Milk Street - the only major connector through the area which is one-way eastbound. It connects Washington Street in the northern CBD area to the Surface Artery. In the vicinity of the site, it provides one travel lane.

- Franklin Street - a low-volume narrow street which provides a one-way eastbound connection from Broad Street to India Street. West of Broad Street, it is one-way westbound and provides a major connector through the Financial District to Downtown Crossing.

- Central Street - a low-volume local street which provides one-way westbound travel between Surface Artery and McKinley Square, two-way travel between McKinley Square and India Street (adjacent to the site), and one-way eastbound travel between India and Broad Streets. Parking on both sides is permitted on the one-way sections of Central Street.

- McKinley Square - a low-volume, two-way local street adjacent to the site which serves as a connector between State Street and Central Street. Some parking serving local uses is permitted.

TRAFFIC VOLUMES

Estimates of existing peak hour volumes are shown in Figures 3 and 4. These volumes were obtained from a variety of sources, including mid-week counts taken in December 1987 and January 1988 and base network volumes taken from the Milk and Broad Street Development Traffic Impact Study and Access Plan (Vanasse Hangen Brustlin, Inc., May 1986). Table 2 shows average daily traffic for several study area streets. These volumes are taken from 24-hour mechanical counts conducted in April 1986 and

Existing A.M. Peak Hour Traffic Volumes

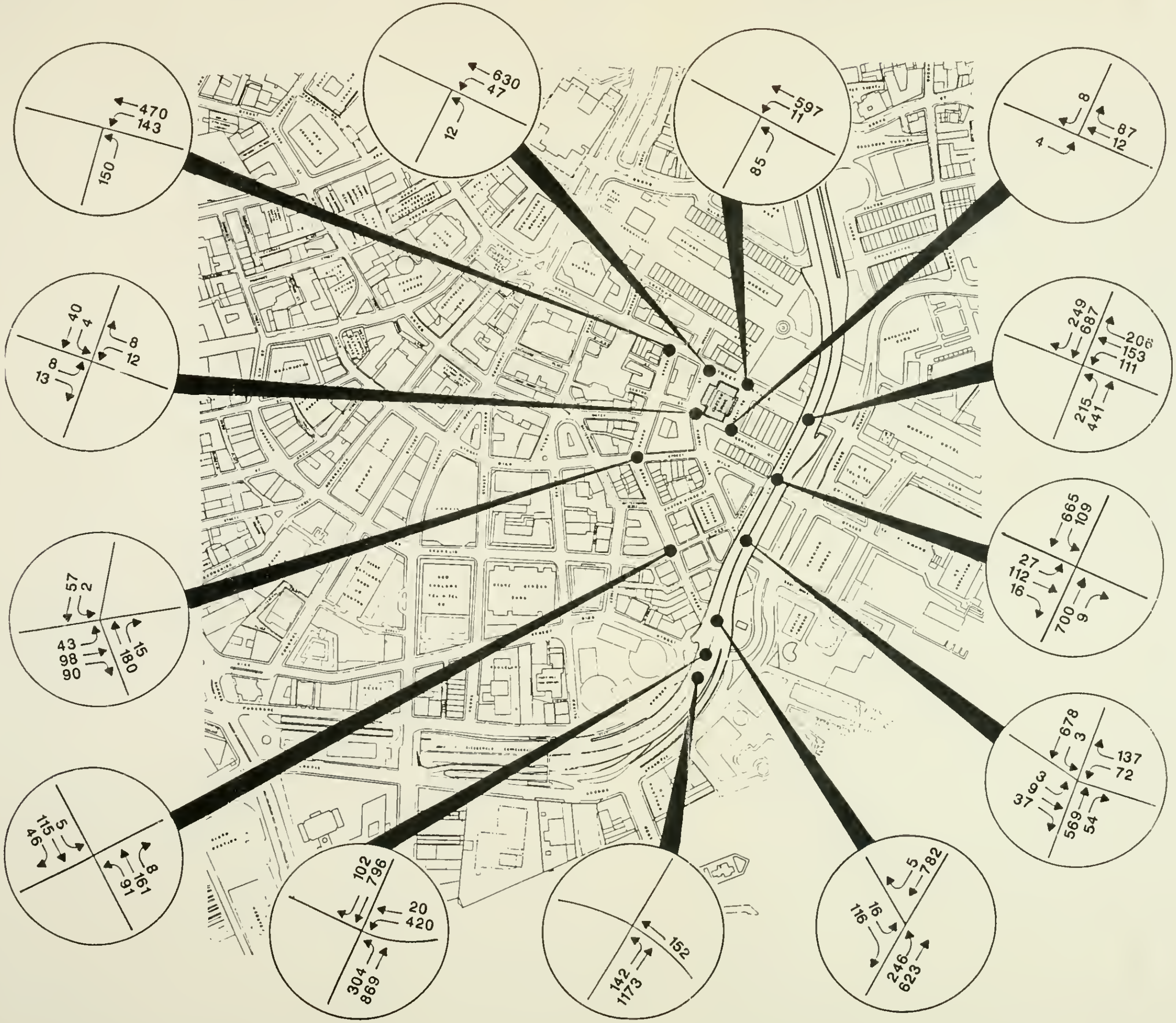

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Fig. 3

Existing P.M. Peak Hour Traffic Volumes

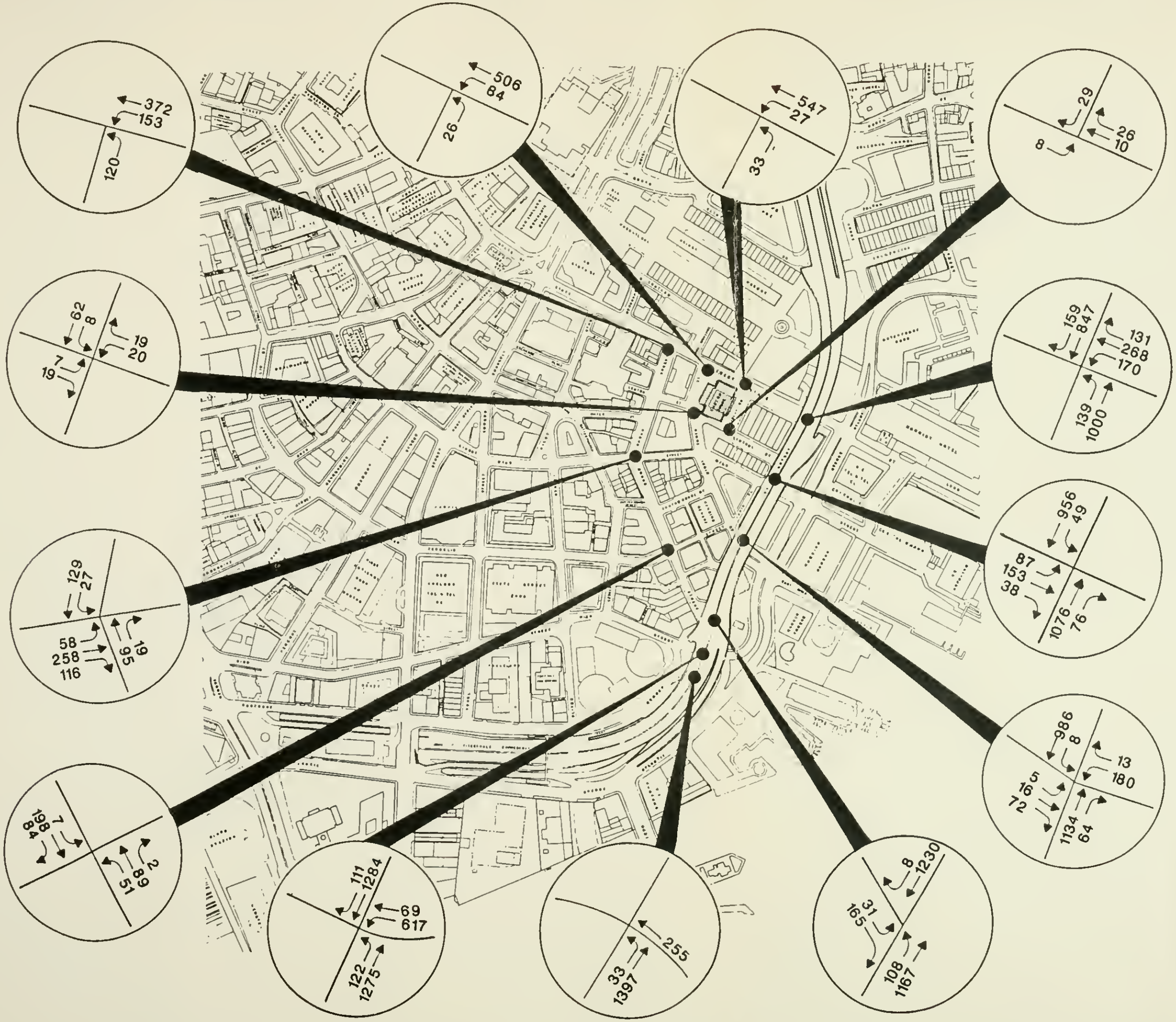

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Fig. 4

TABLE 2
EXISTING TRAFFIC VOLUMES

Location	Average Daily Traffic (ADT)	AM Peak Hour		PM Peak Hour	
		Volume	Percent of Daily	Volume	Percent of Daily
Franklin Street between Broad Street and India Street	400	40	10.0	25	6.2
India Street between Milk Street and Franklin Street	2,600*	N/A	N/A	248	9.5
Milk Street between Broad Street and India Street	3,300	195	5.9	325	9.9
State Street between Commercial Street and Surface Artery	10,000*	N/A	N/A	569	5.7
Surface Artery south of Milk Street	23,200	1,697	7.3	2,699	11.6

* Daily volume estimated from partial day count.
N/A - Not Available.

confirmed by additional mechanical counts conducted in December 1987.

The highest volume roadway is the Surface Artery, with 23,200 trips daily. The next highest roadway is State Street, with 10,000 trips daily. The roadways adjacent to the site carry moderate to low volumes. Peak hour percentages vary from almost six percent in the evening on State Street to almost 12 percent on Milk Street in the evening. It should be noted that traffic conditions are extremely variable on the Surface Artery and, as a result, a one-day count on that roadway may not provide volumes representative of a typical day, especially in the peak hour.

PARKING

The major garage facilities within the project area include Post Office Square (950 spaces), Government Center (1,865 spaces), Harbor Towers (1,400 spaces), One Post Office Square (400 spaces), International Place (425 spaces), Rowes Wharf (280 spaces), and the Quincy Market Garage (595 spaces). Parking demand within the area is currently at or near capacity at the major facilities.

Parking around the Custom House site presently consists of 12 metered spaces and 12 marked spaces designated for Custom House use only, on McKinley Square, plus ten unmarked spaces (also designated for Custom House use) and six metered spaces on India Street. On India Street, up to 30 cars have been observed parking in the large area of open, unmarked pavement found here. No stopping anytime is allowed on State and Central Streets adjacent to the site with the exception of a commercial vehicle zone off the State Street side of the building.

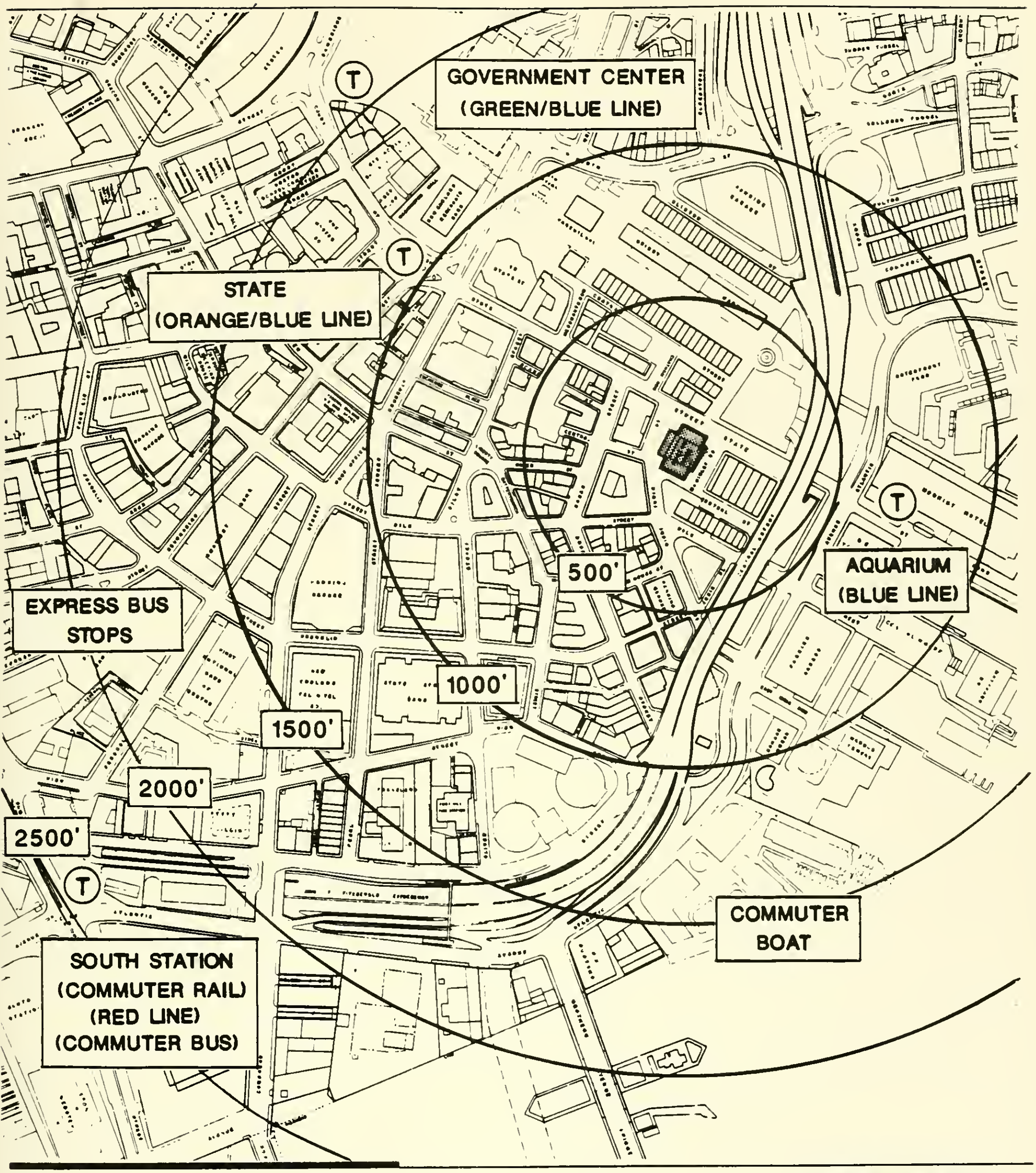
PUBLIC TRANSPORTATION SYSTEM

The proposed project is well served by public transportation. Figure 5 illustrates the major components of the system in the vicinity of the project and their distances from the site. Because of the proximity of the site to the rapid transit system, a significant emphasis has been placed on system capacity and ridership.

Rapid Transit

Direct access to all four rapid transit lines is available within walking distance of the site. The nearest station is Aquarium just two blocks to the east. It provides access to the Blue Line, which runs northeast through East Boston and Revere. The Orange Line, which runs north through Charlestown to the northern suburbs and south through the South End and Roxbury to Jamaica Plain, can be accessed at State Station, located approximately 1,000 feet northwest of the site. The Green Line, which travels north to East Cambridge and west to Allston-Brighton, Brookline and Newton, can be accessed at the Government Center Station, just over 1,500 feet from the site. The Red Line, which runs northwest to Cambridge and south to Dorchester and Braintree, serves South Station, whose nearest entrance is at Dewey Square, approximately 2,500 feet from the site.

Table 3 shows the service frequency and capacity of each rapid transit line. Line capacity is based on car capacity figures used by the MBTA for service planning. While individual cars can physically accommodate more passengers than the planning numbers, loading greater than the planning capacity may cause excessive delays at stations and disrupt the reliability of service. Table 4 compares capacity with existing PM peak hour outbound ridership at each line's peak load point (the location with highest ridership). Overall, the rapid transit system can



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Location of Public Transportation

LEGEND:
▨ Site

Fig. 5

comfortably carry 64,470 riders out of Downtown Boston in the PM peak hour. Actual ridership is at or below planning capacity on all lines except on the Green Line/ West, where the ridership between Arlington and Copley Stations exceeds planning capacity.

TABLE 3
EXISTING RAPID TRANSIT LINE CAPACITY
PEAK HOUR PEAK DIRECTION

Line/Segment	Average Cars/ Train	Average Headway* (minutes)	Average No. of Trains	Planning Capacity of Car**	Planning Capacity of Line
Red Line/North Ashmont-Alewife Braintree-Alewife	4	4	15	180	10,800***
Red Line/South Alewife-Ashmont Alewife-Braintree Park-Quincy	4	3.75	16	180	11,520
Green Line/West Boston College Cleveland Circle Riverside Huntington Ave.	1.6****	1.67	36	130	7,500
Green Line/North Lechmere Service	1.33****	4	15	130	2,600
Orange Line/ North-South Oak Grove-Forest Hills	5	4	15	155	11,625
Blue Line Bowdoin-Wonderland	4	3	20	110	8,800

---

* Red and Green Line headways are based on observed system performance in Fall 1986. Orange and Blue Line headways are based on Fall 1987 schedules obtained from the MBTA.

** The MBTA uses these capacity estimates for planning purposes. Heavier loads can be carried and are often observed on the system.

*** Capacity is slightly lower than Red Line/South because the Quincy-Park run is not included.

**** Represents one-car trains on the Huntington Avenue Line and a mix of one and two-car trains on all other lines.

TABLE 4
EXISTING RAPID TRANSIT CAPACITY AND RIDERSHIP
PM PEAK HOUR OUTBOUND

Line	Planning Capacity of Line*	Ridership at Peak Load Point**	Ridership as Percent of Capacity
Red Line/North	10,800	7,140	66%
Red Line/South	11,520	11,190	97%
Green Line/West	7,500	10,000	133%
Green Line/North	2,600	1,100	42%
Orange Line/North	11,625	10,270	88%
Orange Line/South	11,625	7,080	61%
Blue Line/North	8,800	6,120	70%

---

* See preceding table.

** Red Line and Green Line/West ridership figures are taken from independent observations in Fall 1986; other ridership data are from the most recent peak load counts done by the MBTA (1984).

Bus Service

The area is well served by commuter bus, with MBTA express service provided to the Financial District (along Federal Street) from the west. Private commuter bus service is provided at South Station. MBTA express bus service to the north is provided at the Haymarket station which can be reached via the Orange Line or by a 10 to 15-minute walk from the site. These commuter bus lines are well used and it is the MBTA's policy to encourage continued use by minimizing standees. Consequently, the MBTA will add buses as demand warrants.

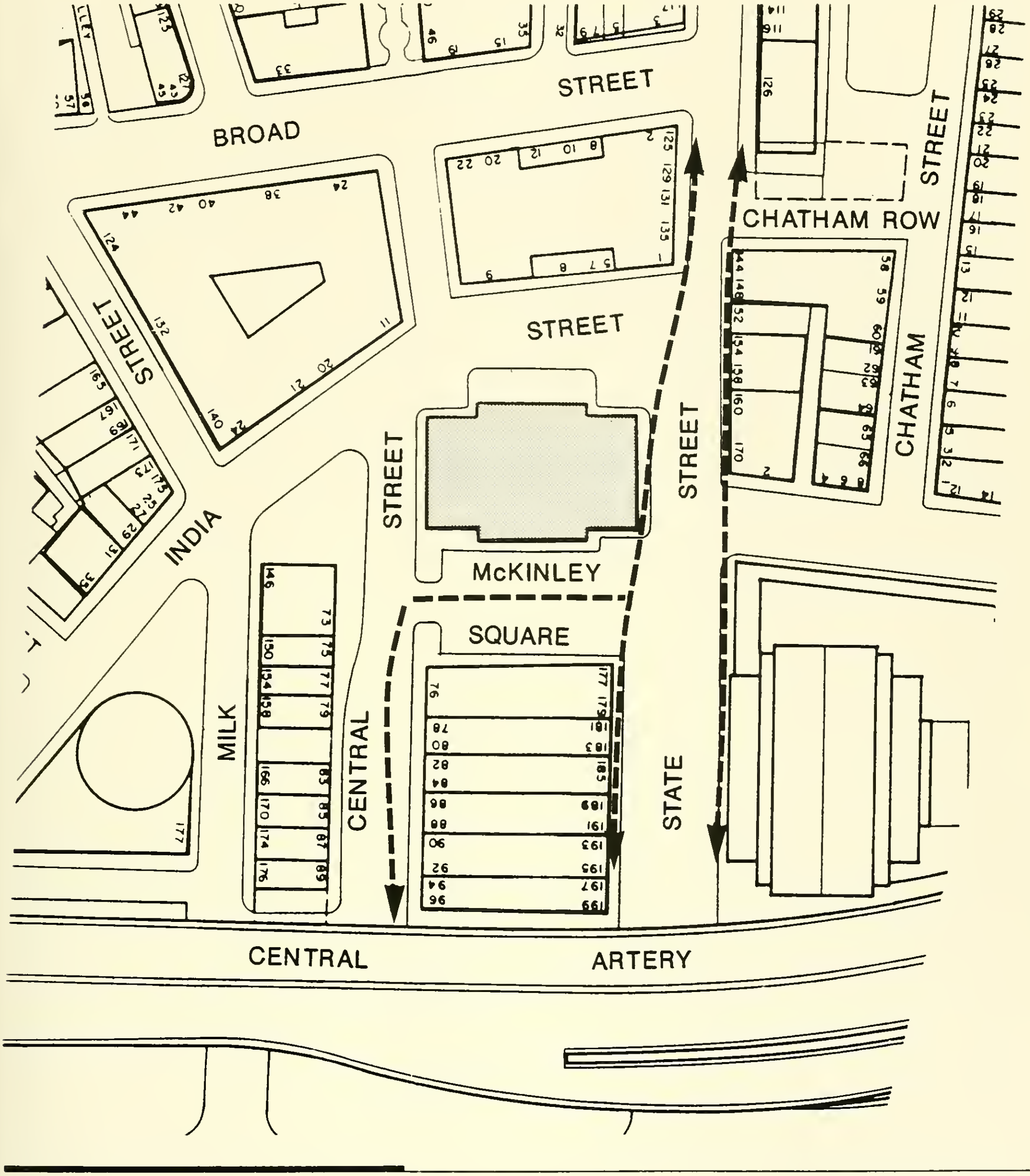
Commuter Rail

Commuter rail service to the south and west is provided approximately 2,500 feet of the site at South Station. Service

to the north and northwest is provided at North Station, which can be reached via the Orange Line or a 10-15 minute walk. As a result, all commuter rail service is accessible from the project site.

PEDESTRIANS

Pedestrian flows around the site were observed in both the morning and evening peak periods in December 1987. From these observations it was determined that, although pedestrians are scattered all around the building, the major pedestrian flows in the area are found on the sidewalks on either side of State Street and through McKinley Square from Central Street. The pedestrian flows from Central Street and McKinley Square join up with those already on State Street. In the AM peak, the major flows are in a westerly direction towards Congress Street, while in the PM peak the major flows are in an easterly direction towards the waterfront. Figure 6 illustrates the major pedestrian flows around the Custom House site.



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Major Pedestrian Flow Patterns

LEGEND:
▨ Site

Fig. 6

PROBABLE PROJECT IMPACTS

DAILY TRIP GENERATION

In order to assess the impact of the project on the transportation system in the site area, travel demand by type of use and user has been estimated. The procedures used in estimating office trips consisted of calculating person-trips per 1,000 square feet of floor space. Trip rates and modal splits have been categorized as office and work vs. non-work. Rates used in the office calculations are identical to those used in several recent downtown environmental assessment reports, including the One Twenty Five High Street Transportation Assessment and Access Plan and the Milk and Broad Street Development Traffic Impact Study and Access Plan.

The proposed redevelopment of the Custom House Tower also includes the provision of 15,000 square feet of museum space within the original structure. The procedure used in estimating museum trips associated with the project was based on estimates provided by the developer of the number of visitors expected annually at the site. A brief summary of the methodology used to calculate these figures appears later in this section.

The development program analyzed for the project calls for 89,000 square feet of office space. Tables 5 and 6 summarize trip rates and modal splits assumed in the analysis and the resultant person-trips based on the development plan analyzed.

A 70 percent transit mode split factor for work trips was used in the trip generation calculations. This figure, and the others found in Table 6, are based on data contained within the December 1983 report, Parking in Central Boston: Meeting the Access Needs of a Growing Downtown. The 70 percent transit

figure used has also appeared in other approved impact reports for downtown projects such as the One Twenty Five High Street Transportation Assessment and Access Plan. It should also be noted that the non-work trip transit factor is based on modal split assumptions used in the downtown parking report for the area in which the project is located.

TABLE 5
TOTAL DAILY OFFICE PERSON-TRIPS

User	Office In	Office Out	Office Total
Generation Rates*			
Worker	4.40	4.40	8.80
Non-Worker	2.35	2.35	4.70
Total	6.75	6.75	13.50
Generated Trips**			
Worker	392	392	784
Non-Worker	209	209	418
Total	601	601	1,202

* Person-trips per 1,000 square feet.
** Total trips per day.

TABLE 6
DAILY OFFICE PERSON-TRIPS BY MODE SPLIT

User	Office Auto	Office Transit	Office Walk
Percentages			
Worker	30.0	70.0	0.0
Non-Worker	27.5	57.5	15.0
Daily Person-Trips			
Worker	235	548	0
Non-Worker	115	241	63

Table 7 summarizes anticipated vehicle occupancy rates for those office trips arriving by auto. These rates are based primarily on information reported in Parking in Central Boston.

TABLE 7
VEHICLE OCCUPANCY FACTORS

	Use
Trip Type	Office
Work	1.8
Non-Work	1.4

Applying the occupancy rates given in Table 7 to the person-trips arriving by auto projected in Table 6 results in a total estimate of 214 daily vehicle-trips (Table 8). These are distributed equally to inbound and outbound trips (107 each way). The 214 daily vehicle-trips include employee-related trips, visitors, taxis, and delivery vehicles.

TABLE 8
DAILY VEHICLE-TRIPS (ONE-WAY)

	Use
Trip Type	Office
Work	131
Non-Work	83
Total	214

PEAK HOUR TRIP GENERATION

Trips occurring during the peak commuter hours are of greater concern than the total daily trips. It is these peak periods which are used to evaluate the performance of the transportation system. The peak hour percentages shown in Table 9 were

multiplied by one-half (to reflect directional travel) of the daily trips in Tables 6 (for transit and walk trips) and 8 (for vehicle-trips) to obtain the results shown in Table 10. A total of 40 inbound vehicle-trips is projected for the morning peak hour, while 40 outbound vehicle-trips are projected for the evening peak. Approximately 163 person-trips are estimated on all forms of public transportation in the peak direction during each peak hour.

TABLE 9
PERCENTAGES OF DAILY OFFICE TRIPS
DURING PEAK HOURS BY TYPE AND DIRECTION*

	Work		Non-Work	
	AM	PM	AM	PM
Office				
Arrivals	55%	2%	10%	2%
Departures	1%	55%	1%	10%

* From One Twenty Five High Street Transportation Assessment and Access Plan.

TABLE 10
TOTAL OFFICE PEAK HOUR TRIPS BY MODE
(PEAK DIRECTION)

	AM Inbound			PM Outbound		
	Auto*	Transit**	Walk	Auto*	Transit**	Walk
Office						
Work	36	151	0	36	151	0
Non-Work	4	12	3	4	12	3
Total	40	163	3	40	163	3

* Vehicle trips
** Person trips on all forms of public transportation

DELIVERY VEHICLE AND TAXI TRIPS

A certain amount of the total daily vehicle generation will consist of taxi and delivery vehicle-trips. Delivery vehicles are typically single-unit, two-axle vans rather than large trucks. Table 11 summarizes the delivery vehicle traffic expected for the project's office component.

TABLE 11
ESTIMATED DAILY DELIVERY VEHICLE ARRIVALS

	Office
Generation Rate	0.21 Arrivals/ 1,000 Sq.Ft.
1990 Build Deliveries	19

* Based on Copley Place EIR.

At 1990 Build conditions, approximately 19 deliveries are expected daily at the proposed redevelopment. The Custom House Tower would average almost three delivery vehicles per hour for office use, assuming a constant distribution over a nine-hour day. If it is further assumed that each delivery vehicle arrives and departs within the same hour, then a maximum of approximately six delivery vehicle trips per hour would occur. A small amount of additional activity will be generated by the museum. Most of these trips would be short-term deliveries which will be easily accommodated by the project's drop-off/pickup facilities.

The amount of taxi traffic expected to be generated by the site is summarized in Table 12. Under 1990 Build conditions, approximately nine office-related taxi arrivals per day are expected. Additional taxi activity will also be generated by the museum. As stated later in the report, provision should be made for a taxi drop-off on State Street.

TABLE 12
ESTIMATED DAILY TAXI ARRIVALS

	Office
Generation Rate	0.75 Arrivals/ 100 Person-Trips*
1990 Build Taxi Arrivals	9

* Based on Highway Research Board, NCHRP Report No. 62, Urban Travel Patterns for Hospitals, Universities, Office Buildings and Capitols, 1969.

MUSEUM TRIP GENERATION

The methodology used to calculate the number of daily and peak hour trips generated by the 15,000 square foot museum proposed for the Custom House Tower redevelopment is briefly summarized in the following paragraphs.

The developer estimates that approximately 250,000 people will visit the proposed museum annually. Based on this figure, the number of people which would arrive at the museum daily, assuming a six-day week, was conservatively calculated to be approximately 1,000 visitors per day. Mode split factors were then derived which took into account the museum's characteristics and location, and knowledge of its potential visitors. Applying the mode split factors to the projected daily trip generation, the number of daily person trips by mode for the museum were calculated. These figures, along with the derived mode split factors, can be found in Table 13.

TABLE 13
DAILY MUSEUM PERSON-TRIPS BY MODE SPLIT

	Museum			
User	Auto	School Bus	Transit	Walk
Percentages	10.0	15.0	15.0	60.0
Daily Person-Trips	100	150	150	600

Assuming a vehicle occupancy rate of 2.0 for auto use and 56.0 for school buses, the number of daily vehicle-trips can be found in Table 14.

TABLE 14
DAILY MUSEUM VEHICLE-TRIPS (ONE-WAY)

Mode	Person-Trips	Vehicle Occupancy Rate	Daily Vehicle-Trips
Auto	100	2.0	50
School Bus	150	56.0	3
		Total =	53

Finally, the number of peak hour trips to be generated by the museum was projected. Since the museum will not be open during the morning peak hour, it will have no impact on the transportation system at this time of the day. However, the museum is expected to be open during the evening peak hour. It has been conservatively projected (i.e., on the high side) that approximately 10 percent of the estimated number of daily visits to the museum will occur during the PM peak. This estimate may also be high in light of the fact that peak activity for the museum itself is expected to occur between the hours of 11:00 AM and 3:00 PM. The results of the projected peak hour vehicle trip generation are found in Table 15. These trips, in addition to

those generated by the redevelopment's office component, were used in assessing the impact of the project on the transportation system within the study area.

TABLE 15
TOTAL MUSEUM PEAK HOUR TRIPS BY MODE

	PM Inbound and Outbound Trips			
Use	Auto	School Bus	Transit	Walk
Museum	5	0*	15	60

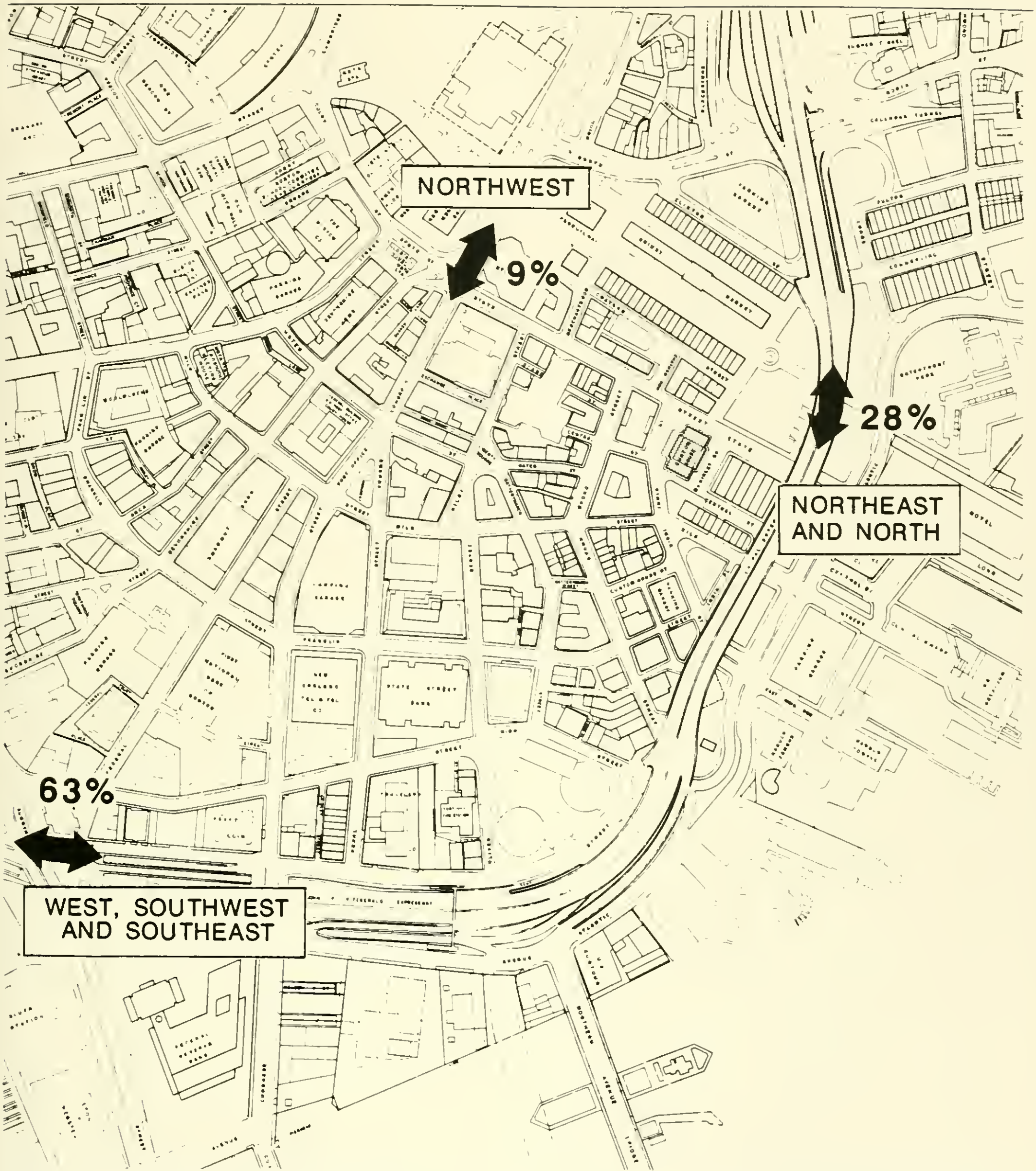
* It is assumed that any school bus activity generated by the site will not occur at this time of the day.

TRIP DISTRIBUTION AND ASSIGNMENT

The additional vehicle-trips from the proposed development were distributed to the transportation system according to the trip distribution pattern listed in Table 16 and shown in Figure 7. This is the same pattern that has been established in other major downtown EIRs. Assignment of these trips to the local street system in the vicinity of the site was a function of the access to local parking garages, the existing pattern of one-way streets in the vicinity, and the location of Central Artery ramps.

TABLE 16
TRIP DISTRIBUTION

Direction	Percent
Northeast	14%
North	14%
Northwest	9%
West	17%
Southwest	22%
Southeast	24%
Total	100%



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Trip Distribution Map

LEGEND:
☐ SITE

Fig. 7

BACKGROUND TRAFFIC GROWTH

In order to assess future conditions, it is not only necessary to project development-related traffic increases, but also to project increases in background traffic. Growth in background traffic is a function of other development activity expected within the area. This growth can be projected by the application of a generalized growth factor or by the assessment of specific development proposals. For this analysis, the projection of background or No-Build traffic (i.e., future traffic without the Custom House Redevelopment) was based on the assessment of other specific development proposals projected to be completed by 1990, the year when the Custom House is expected to be fully occupied.

Table 17 lists the projects included in the development of the 1990 No-Build networks and the projected uses for each development. When applicable, previous documentation presented in other Environmental Impact Reports and Environmental Assessments was utilized where traffic volumes were available. Where volumes were not available from other sources, the trip generation assumptions described earlier were applied to the projected uses for each identified background development to obtain projected vehicle, transit and pedestrian trips.

The vehicle-trips generated by each background development were then assigned to the roadways to obtain the morning and evening peak hour No-Build networks shown in Figures 8 and 9, respectively. The projected traffic from the Custom House Redevelopment was added to these 1990 No-Build volumes to obtain the 1990 Build volumes shown in Figures 10 and 11.

1990 No Build A.M. Peak Hour Traffic Volumes

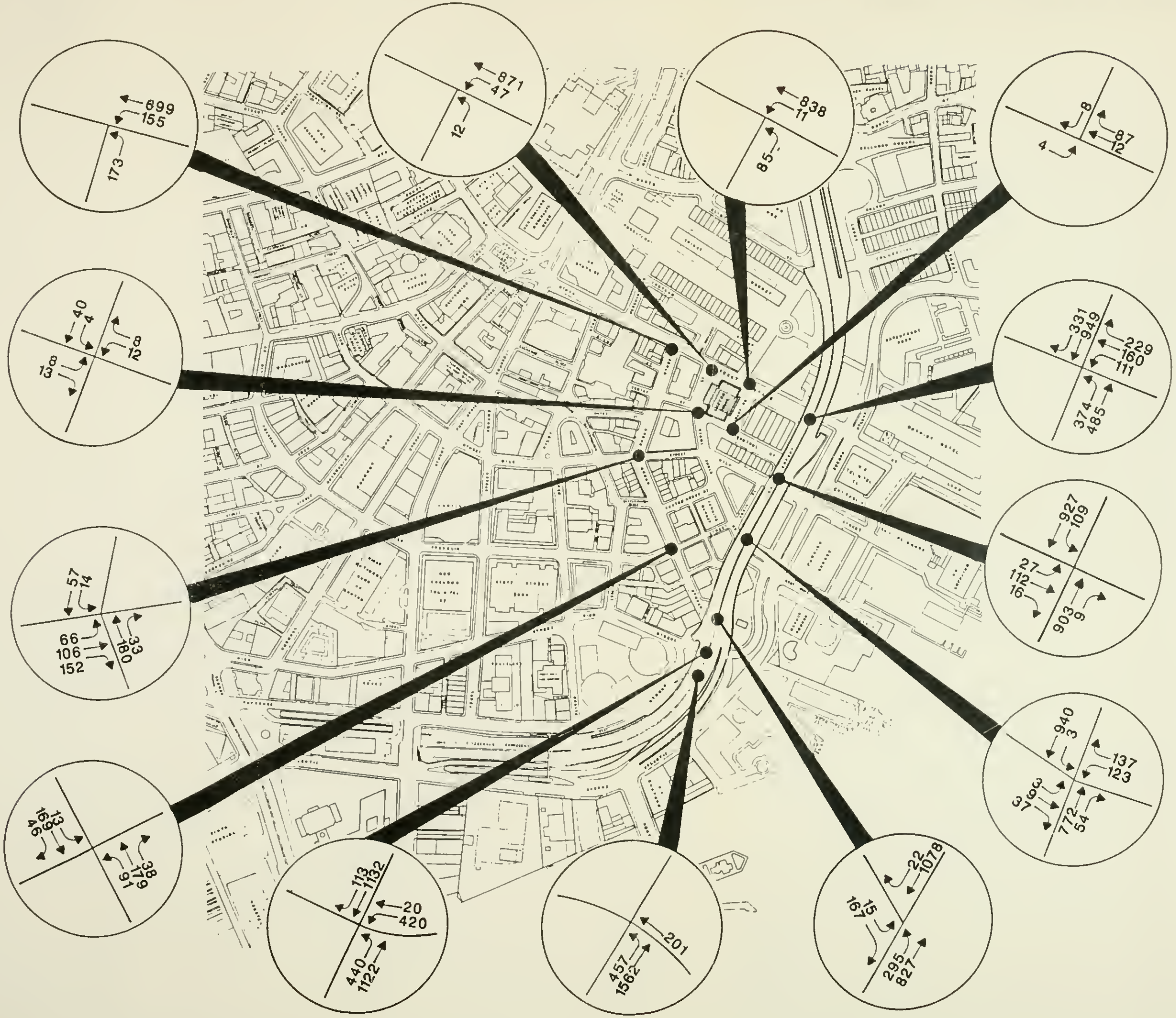

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Fig. 8

1990 No Build P.M. Peak Hour Traffic Volumes

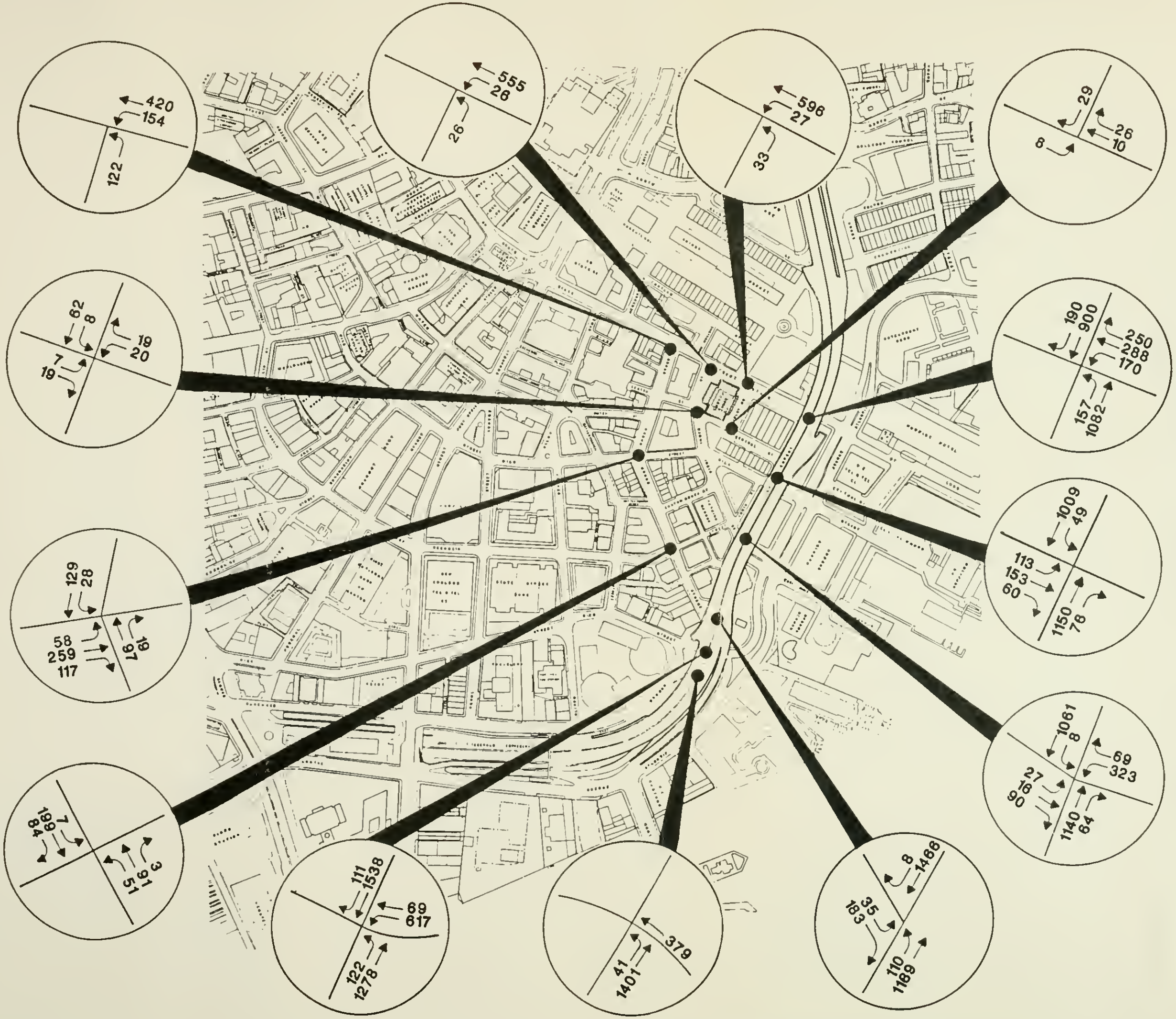

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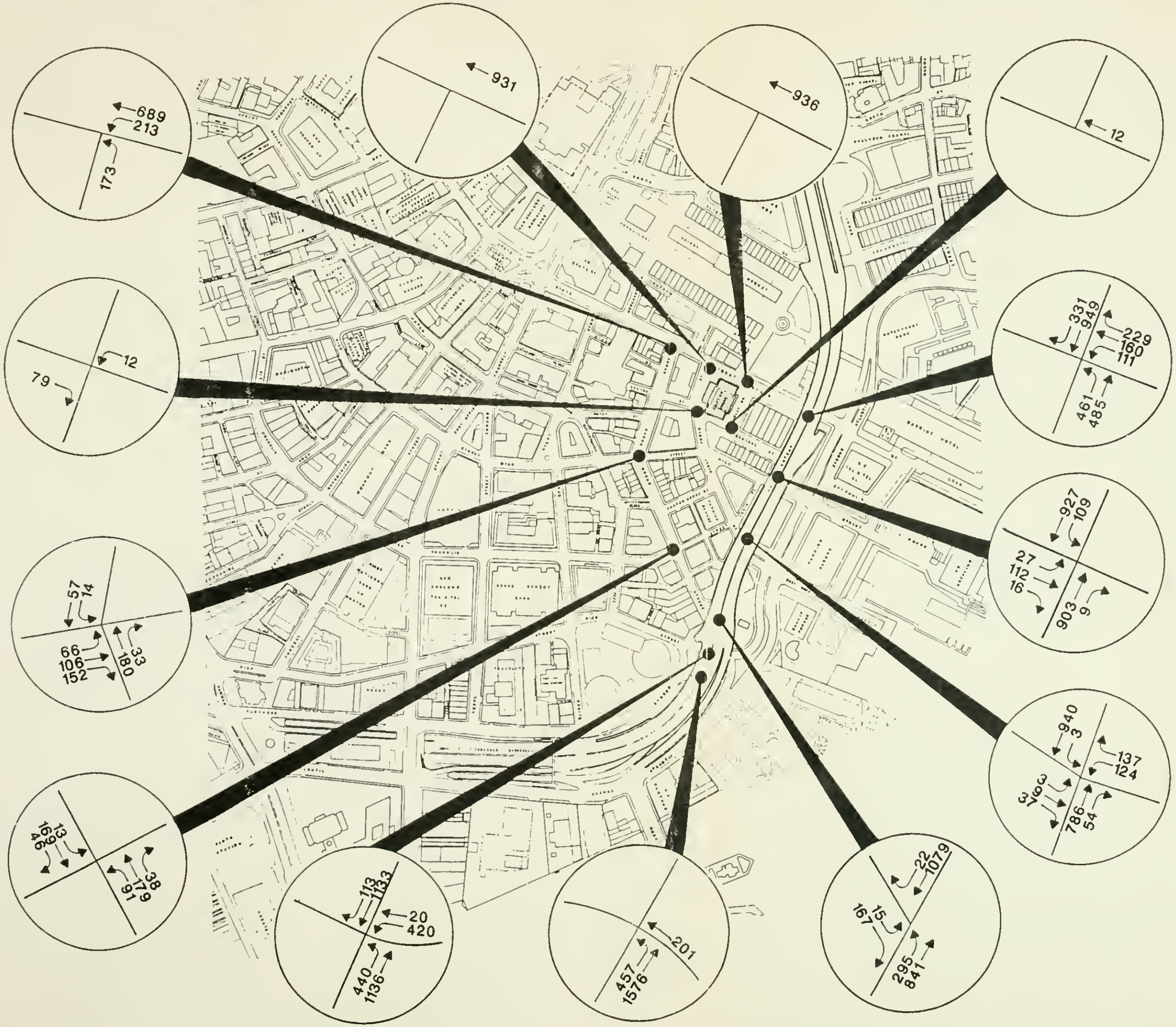
Fig. 9

1990 Build A.M. Peak Hour Traffic Volumes



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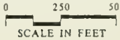

Fig. 10

1990 Build P.M. Peak Hour Traffic Volumes

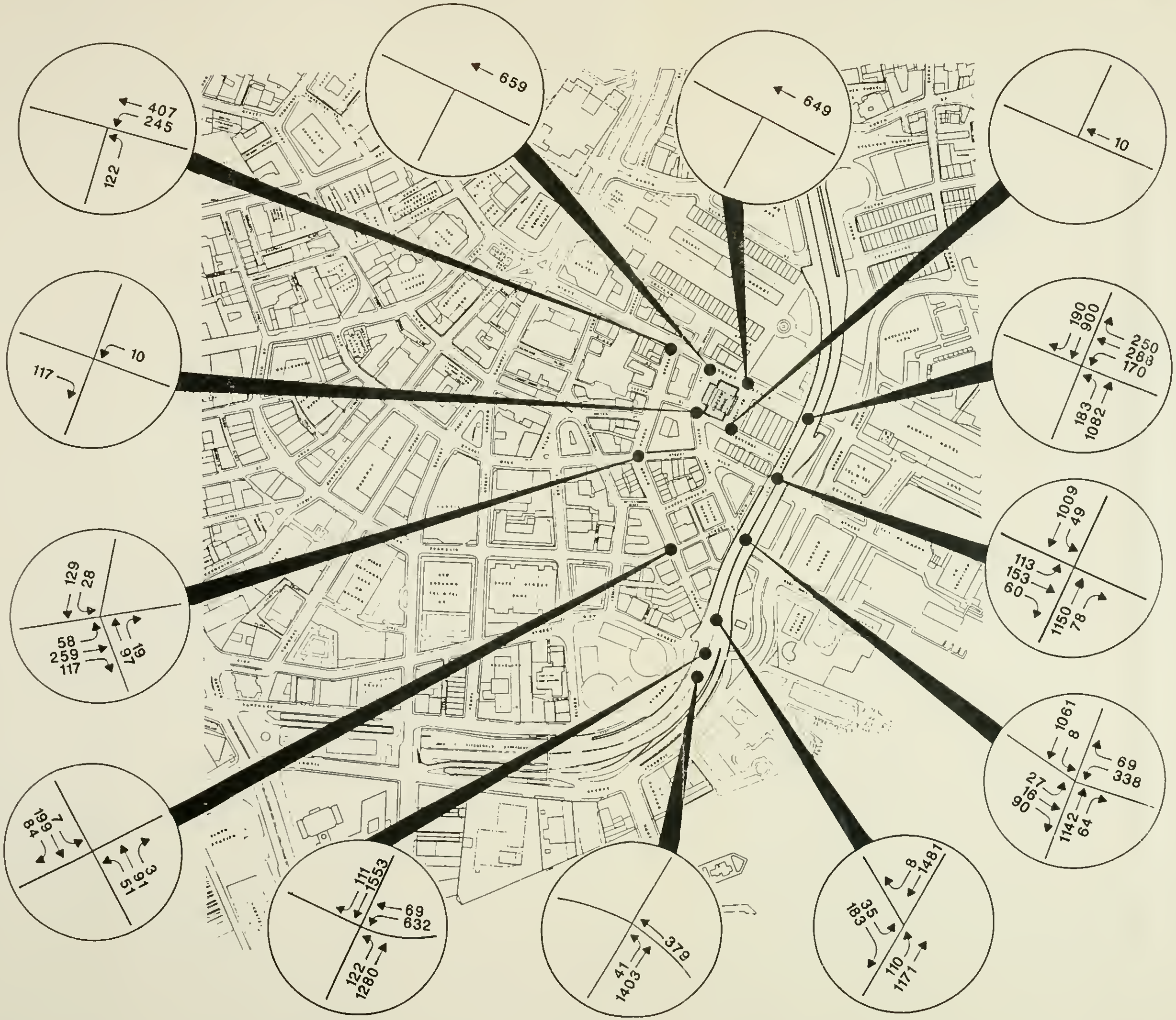

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Fig. 11

TABLE 17
1990 BACKGROUND DEVELOPMENT

Development	Size	Use
Downtown Boston		
Rowes Wharf	665,000 SF	Office/Retail/ Hotel/Residential
International Place	1,700,000 SF 100,000 SF	Office Retail
Marketplace Center	442,000 SF	Office/Retail
75 State Street	685,000 SF 15,000 SF	Office Retail
101 Federal Street	497,000 SF 10,000 SF	Office Retail
150 Federal Street	475,000 SF 10,000 SF	Office Retail
99 Summer Street	285,000 SF	Office
Wang Laboratories	100,000 SF	Manufacturing
745 Atlantic Avenue	180,000 SF	Office
20 and 21 Custom House	223,000 SF 17,000 SF	Office Retail
125 Summer Street	482,000 SF 13,000 SF	Office Retail
South Station (Phases I and II)	75,000 SF 35,000 SF	Office Retail Train Concourse Platforms
200 High Street	83,500 SF 11,000 SF	Office Retail
South Boston		
Commonwealth Pier 5	752,000 SF*	World Trade Center
Fish Pier 6	130,000 SF 18,000 SF	Office Fish Market

TABLE 17(Continued)
1990 BACKGROUND DEVELOPMENT

Development	Size	Use
Boston Wharf Company	321,000 SF 557,000 SF 236 DU**	Office Industrial
Gillette Company	105,000 SF	Manufacturing Research
Boston Marine	625,000 SF	Light Industrial/ Fish Processing
425 Summer Street	171,500 SF 8,000 SF	Office Retail
435 Summer Street	173,100 SF 7,000 SF	Office Retail

* SF - Square feet.
** DU - Dwelling unit.

INTERSECTION ANALYSIS

Traffic Operations Measures

- Signalized Intersections

Signalized intersections within the study area were evaluated using a computer program based on the 1985 Highway Capacity Manual procedures. Signalized intersection analysis considers a wide variety of prevailing conditions, including the amount and distribution of traffic movements, traffic composition, geometric characteristics, and the details of intersection signalization. Critical to the evaluation are the concepts of capacity and level of service (LOS). Unlike previous methodologies, these two concepts are not simply related, but must be considered together to evaluate the overall operation of a signalized intersection.

In this approach, capacity at intersections is defined for lane groups, rather than for approaches or the intersection as a whole. A lane group may be a single movement, a group of movements, or an entire approach and is defined by the geometry of the intersection and the distribution of movements over the various lanes. Capacity of a lane group is defined as the maximum rate of flow for the lane group which may pass through the intersection under prevailing traffic, roadway and signalization conditions. The rate of flow is generally measured or projected for a 15-minute period, and capacity is stated in vehicles per hour. Capacity analysis of intersections involves the computation of volume-to-capacity (V/C) ratios for each lane group, from which an overall intersection V/C ratio may be derived based on the sum of critical movements.

Generally, when two opposing flows are moving during a signal phase, one of the lane groups will require more green time than another in order to process all of its volume. This would be defined as the "critical" lane group for the subject signal phase. The concept of a critical V/C ratio is used to evaluate the intersection as a whole, considering only the critical lane groups, i.e., those that have the greatest demand for green time within each signal phase. This procedure assumes that green time has been appropriately allocated. Thus, it is possible to have an overall intersection V/C ratio of less than 1.00 (under-capacity), but still have individual movements be oversaturated within the signal cycle if the green time has not been appropriately allocated to the various approaches.

The other major concept in signalized intersection analysis is level of service, which is defined in terms of delay. Delay represents a measure of driver discomfort, frustration, fuel consumption, and lost time. Level of service delay criteria are stated in terms of average stopped delay per vehicle for a

15-minute analysis period. The criteria are presented in Table 18.

TABLE 18
LEVEL OF SERVICE CRITERIA FOR
SIGNALIZED INTERSECTIONS

Level of Service	Stopped Delay per Vehicle (seconds)
A	≤ 5.0
B	5.1 to 15.0
C	15.1 to 25.0
D	25.1 to 40.0
E	40.1 to 60.0
F	>60.0

Source: Highway Capacity Manual, Special Report 209, Transportation Research Board, Washington, D.C., 1985.

Level of service can range from LOS "A" to LOS "F". Level of Service "A" describes operations with very low delay, i.e., less than 5.0 seconds per vehicle. This occurs when progression is extremely favorable, and most vehicles arrive during the green phase. Most vehicles do not stop at all. Level of Service "F" describes operations with delay in excess of 60.0 seconds per vehicle. This condition, characterized by congested conditions, is considered to be unacceptable to most drivers. Between LOS "A" and LOS "F", traffic conditions and, therefore, delays become progressively worse. Level of Service "D" or better is generally considered acceptable, particularly in urban areas.

Delay is a complex measure which depends upon a number of variables, listed in decreasing order of importance: the quality of signal progression, the cycle length, the allocation of green time, and V/C ratio. Of note is that V/C ratio, of all the factors cited, has the least effect on delay. Thus, for any

given V/C ratio, a range of delay values (and, therefore, level of service) may result. Conversely, for a given level of service, the V/C ratio may lie anywhere within a broad range.

For the reasons stated above, both capacity and level of service must be carefully examined when analyzing a signalized intersection. The designation of an approach as operating at LOS F does not automatically imply that the entire intersection, approach or lane group is overloaded, nor does a level of service in the A to E range automatically indicate that there is unused capacity available. Simply stated, V/C ratios are a measure of the physical and operational characteristics of an intersection, while delay and level of service are an average measure of a driver's perception and experience at a particular intersection. Together, these two parameters are used to evaluate signalized intersection performance.

● Unsignalized Intersections

Level of service for unsignalized intersections is based on the number of acceptable gaps available in the major street traffic flow that may be utilized by minor street vehicles. The criteria shown in Table 19 are based on the available reserve (or unused) capacity (measured in passenger cars per hour) for the minor street movement in question. The table also includes a qualitative index of delay to minor street traffic.

TABLE 19
LEVEL OF SERVICE CRITERIA FOR UNSIGNALIZED INTERSECTIONS

Reserve Capacity	Level of Service	Expected Delay to Minor Street Traffic
>400	A	Little or no delay
300-399	B	Short traffic delays
200-299	C	Average traffic delays
100-199	D	Long traffic delays
0-99	E	Very long traffic delays
<0	F	Extremely long traffic delays*

* Queuing may cause severe congestion affecting other traffic movements in the intersection. This condition usually warrants improvement to the intersection.

Source: Highway Capacity Manual, Special Report 209, Transportation Research Board, Washington, D.C., 1985.

Caution should be used in the interpretation of the delay associated with unsignalized levels of service. The expected delays are stated in general terms, without specific numeric values. Unsignalized levels of service are not associated with the delay values given for signalized intersections. Level of Service "F" indicates that there are insufficient gaps of suitable size to allow minor street demand to safely enter or cross the major street traffic. This is generally evident by long delays and possibly by queuing on the minor street. Level of Service "F" also may result in side street vehicles accepting smaller than usual gaps. In such cases, safety may be compromised and some disruption to the major street traffic can result. It should be noted that the major street traffic can still move effectively at Level of Service "F" and only side street traffic may experience difficulty. This is why it is important to understand that level of service results must be interpreted differently for unsignalized and signalized locations.

Level of Service "F" conditions usually warrant investigation into possible improvements to the intersection. The most common form of improvement in such situations is installation of a traffic signal to provide a break in main street traffic to allow side street traffic to move. Such an improvement may not be warranted or desirable if side street volumes are low. A further consideration as to the desirability of such an improvement is that installation of a signal will increase delay to the major street traffic.

- Capacity Analysis

All study intersections were analyzed using the analysis procedures described above. Tables 20 and 21 and Figure 11 summarize the results of the capacity analyses for all intersections for Existing, No-Build and Build conditions. However, the analysis results for three study intersections, State Street/ India Street, State Street/McKinley Square, and Central Street/ McKinley Square, do not appear in the summary tables or figure under the Build condition. Since both India Street and McKinley Square are to be closed between State and Central Streets in order to accommodate the pedestrian plazas proposed by the developer, these intersections will no longer exist when the project is completed. Since there will no longer be conflicting volumes at these locations under Build conditions, standardized analysis techniques could not be applied.

Under existing conditions, one study location was calculated to operate at deficient levels of service during both peak periods. The intersection of Surface Artery/High Street/Atlantic Avenue operates at Level of Service (LOS) "E" during the morning peak hour and LOS "F" during the evening peak hour. This is due to the heavy volume of left turns from Atlantic Avenue bound for

TABLE 20
INTERSECTION LEVEL OF SERVICE SUMMARY
AM PEAK PERIOD

	Existing Analysis			No-Build Analysis 1990			Build Analysis 1990		
Location	V/C*	Delay**	LOS***	V/C	Delay	LOS	V/C	Delay	LOS
SIGNALIZED									
Surface/State	0.58	19	C	1.19	60+	F	1.38	60+	F
Surface/Milk	0.47	6	B	0.66	8	B	0.66	8	B
Surface/India	0.40	8	B	0.51	8	B	0.51	8	B
Surface/Broad	0.35	5	B	0.46	6	B	0.47	6	B
Surface/High/Atlantic	0.79	44	E	1.31	60+	F	1.32	60+	F
I-93 Off-Ramp/Atlantic	0.49	7	B	0.65	9	B	0.66	9	B
	Critical Move^^	Reserve^ Capacity	LOS	Critical Move	Reserve Capacity	LOS	Critical Move	Reserve Capacity	LOS
UNSIGNALIZED									
State/Broad	NB Left	295	C	NB Left	140	0	NB Left	106	D
State/India	NB Left	461	A	NB Left	339	B	N/A^^^		
State/McKinley	NB Left	434	A	NB Left	299	C	N/A		
India/Central	WB Left	1,106	A	WB Left	1,106	A	WB Left	1,051	A
McKinley/Central	EB Left	1,208	A	EB Left	1,208	A	N/A		
Broad/Milk	EB Left	648	A	EB Left	543	A	EB Left	543	A
Broad/Franklin	NB Left	1,062	A	NB Left	1,001	A	NB Left	1,001	A

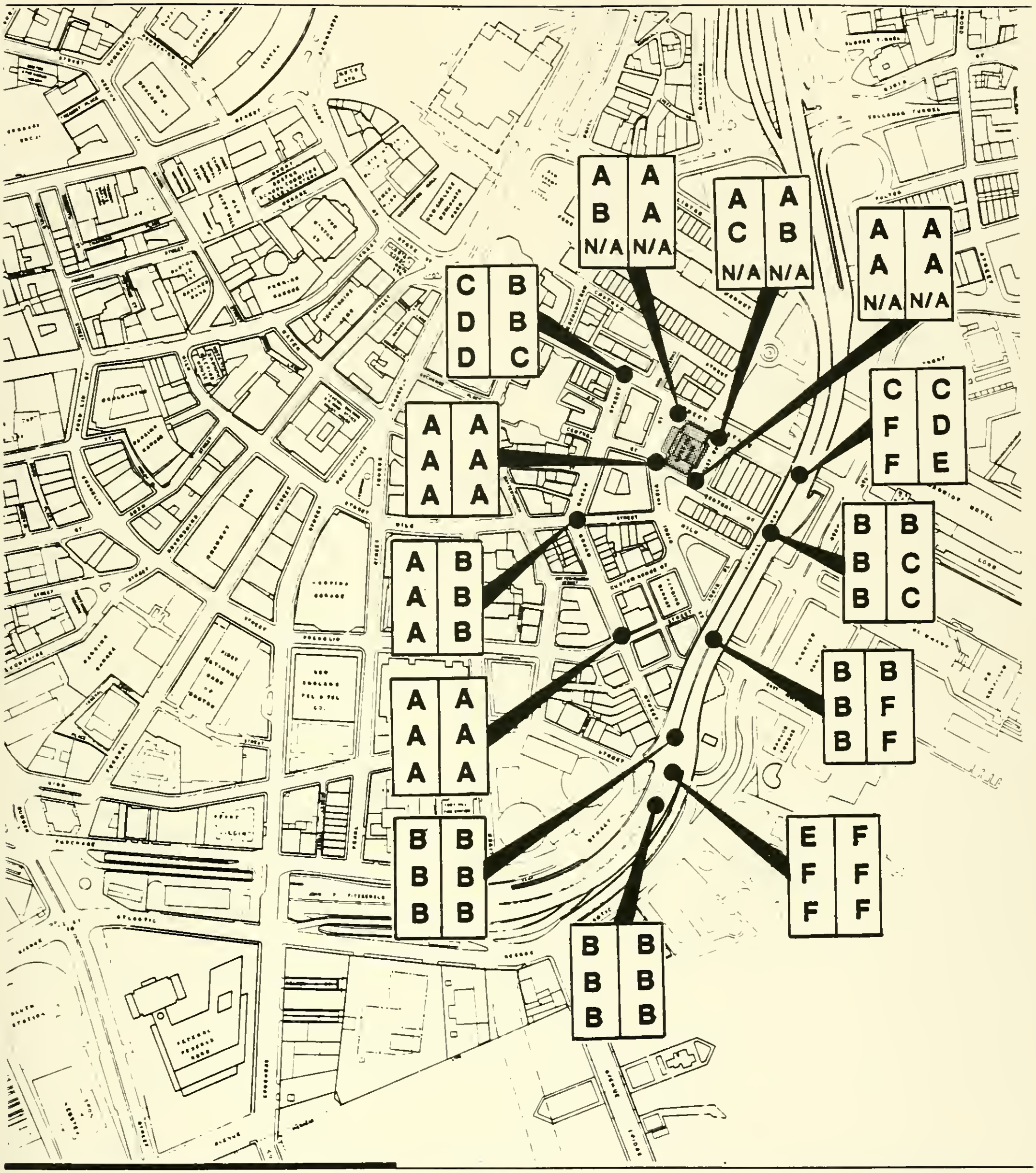
* V/C = Volume-to-capacity ratio.
** Delay = Average intersection stopped delay in seconds.
*** LOS = Level of Service.
^ Reserve capacity in vehicles per hour.
^^ NB = Northbound, SB = Southbound, EB = Eastbound, WB = Westbound
^^^ N/A = No conflicting volumes due to closure of India Street and McKinley Square between State and Central Streets.

TABLE 21
INTERSECTION LEVEL OF SERVICE SUMMARY
PM PEAK PERIOD

Location	Existing Analysis			No-Build Analysis 1990			Build Analysis 1990		
	V/C*	Delay**	LOS***	V/C	Delay	LOS	V/C	Delay	LOS
SIGNALIZED									
Surface/State	0.68	18	C	0.83	34	D	0.87	48	E
Surface/Milk	0.76	12	B	0.88	22	C	0.88	23	C
Surface/India	0.70	7	B	0.89	60+	F	0.91	60+	F
Surface/Broad	0.39	7	B	0.57	7	B	0.58	7	B
Surface/High/Atlantic	0.97	60+	F	1.12	60+	F	1.14	60+	F
I-93 Off-Ramp/Atlantic	0.66	12	B	0.70	12	B	0.70	12	B

	Critical Move^^	Reserve^ Capacity	LOS	Critical Move	Reserve Capacity	LOS	Critical Move	Reserve Capacity	LOS
UNSIGNALIZED									
State/Broad	NB Left	381	B	NB Left	347	B	NB Left	270	C
State/India	NB Left	454	A	NB Left	422	A	N/A^^^		
State/McKinley	NB Left	414	A	NB Left	381	B	N/A		
India/Central	WB Left	1,085	A	WB Left	1,085	A	WB Left	872	A
McKinley/Central	SB Right	1,242	A	SB Right	1,242	A	N/A		
Broad/Milk	EB Left	367	B	EB Left	363	B	EB Left	363	B
Broad/Franklin	NB Left	985	A	NB Left	984	A	NB Left	984	A

* V/C = Volume-to-capacity ratio.
** Delay = Average intersection stopped delay in seconds.
*** LOS = Level of Service.
^ Reserve capacity in vehicles per hour.
^^ NB = Northbound, SB = Southbound, EB = Eastbound, WB = Westbound
^^^ N/A = No conflicting volumes due to closure of India Street and McKinley Square between State and Central Streets.



LEGEND:

X X	Existing
X X	No-Build
X X	Build

N/A Not Applicable

▨ Site

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Intersection Level of Service

Fig. 12

Purchase Street. All other locations operate at LOS "C" or better in both peak hours.

Tables 20 and 21 also illustrate changes in volume-to-capacity ratios, delays, reserve capacity and levels of service under No-Build conditions in 1990. In the morning peak hour, five of the thirteen intersections analyzed experience a decline in level of service, but only one becomes deficient (Surface/State). All but two of the thirteen analysis intersections provide LOS "D" or better (Surface/State and Surface/High/Atlantic).

Four study intersections experience a decline in LOS in the evening peak hour from Existing to No-Build conditions. Only one of these become deficient (Surface/India). Eleven of the thirteen study intersections operate at LOS "D" or better (Surface/India and Surface/High/Atlantic).

The addition of project-related traffic to the 1990 No-Build volumes and the closing of India Street and McKinley Square between State and Central Streets at the base of the site results is no decline in LOS in the morning peak hour, and only two study intersections dropping in LOS in the evening peak hour, and these only marginally. During the evening peak period, the signalized intersection of Surface Artery and State Street will experience a decline from LOS "D" to LOS "E"; however, this drop is due to a slight increase in V/C ratio of 0.04. The unsignalized intersection of State Street and Broad Street will also decline in level of service from LOS "B" to "C". A decrease of 77 passenger cars per hour in reserve capacity will be experienced at this study location. As explained earlier for unsignalized locations, this means only that side street (Broad Street) traffic will be affected, not State Street where most traffic occurs.

In terms of actual volume, the largest project impacts will be at the intersections of Surface Artery/India Street, Surface Artery/Broad Street, and Surface Artery/High Street/Atlantic Avenue in the morning peak hour and at the intersection of Surface Artery/High Street/Atlantic Avenue in the evening peak hour. In the AM peak, an additional 14 vehicles will utilize each of the three listed locations and a total of 30 additional vehicles will utilize the Surface Artery/High Street/Atlantic Avenue intersection during the PM peak hour. However, as can be seen from the level of service analysis results, these additional volumes generated by the project will have no significant effect on the operational characteristics of any of these locations. Also, and perhaps more importantly, these results indicate that the traffic volumes diverted by the closure of India Street and McKinley Square between State and Central Streets will have no adverse effects on traffic operations in vicinity of the site.

It should be noted at this point that the developer's proposed use of the Custom House will result in an even smaller net increase in vehicular trips associated with the site compared to its former use by the Federal Government through early 1987. The redevelopment will actually generate only six additional trips on the roadway network within the study area during each peak hour. Therefore, the impact of vehicular traffic generated by the Custom House redevelopment is measurable but insignificant.

PARKING

As was previously noted within the Exiting Conditions section of the report, 18 metered spaces, 22 marked spaces specifically labeled for Custom House use only, and approximately 30 unmarked spaces (all on India Street), were inventoried along the block faces adjacent to the structure. A major constituent of the

redevelopment proposal for the Custom House includes the construction of a large pedestrian plaza at the base of the site. In order to accommodate this plaza, the closure of India Street and McKinley Square between State and Central Streets will be required.

The closure of these streets will result in the removal of all parking currently found at the foot of the building. The developer believes that the area at the base of the Custom House is not an appropriate place for parking. Due to the building's historic significance, a pedestrian plaza is much better suited to this area.

The most significant impact resulting from the parking loss is the 18 metered spaces found here. Details are not yet known, but the developer is tentatively planning to replace at least some of these metered spaces, since most are utilized by the McKinley Square merchants. The spaces which are designated for Custom House use only are easily expendable, since they are associated with the site, as are the unmarked spaces. The unmarked spaces are used by parked vehicles which crowd in adjacent to the main entrance to the Custom House on India Street and detract from the building's unique features.

The 264 daily vehicle trips generated by the Custom House Redevelopment will create a demand for 66 long-term employee spaces (all day commuter parking) and 25 short-term spaces. Since no parking will be provided on the site, it may be assumed that this relatively small demand will be met off-site (most likely at the Harbor Towers Garage or at the Quincy Market Garage on Clinton Street) or through some shift to transit or increased ridesharing.

TRANSIT ANALYSIS

• Planned Services

The capacity of every MBTA rapid transit line as well as the MBTA commuter rail network will be significantly expanded by 1990, as a result of numerous construction projects, vehicle purchases, and scheduling decisions, all of which are completed or underway. On the Green Line/West, a 25 percent increase in capacity will be made possible by the purchase of 100 new LRVs. One the Red Line, a 50 percent increase in capacity is planned. This will be made possible by the purchase of 58 new cars, rehabilitation of the existing Red Line fleet, and extension of station platforms to accommodate six-car trains instead of the current four-car maximum. On the Blue and Orange Lines, the Fall 1987 scheduled capacity reported under Existing Conditions already reflects the recent capacity improvements. On the commuter rail system, the purchase of 107 new coaches will allow for a significant increase in capacity. The projected peak hour (both morning and evening) capacity of the rapid transit system in 1990 is shown in Table 22.

• Project Transit Demand

Based on the trip generation and mode split patterns for downtown commercial developments, the Custom House Tower is expected to generate a total of approximately 939 daily transit trips. About 167 of these will occur in the AM peak hour, and about 186 will occur in the PM peak hour.

TABLE 22
1990 PEAK HOUR RAPID TRANSIT LINE CAPACITY

Line/Segment	Average Cars/ Train	Average Headway* (minutes)	Average No. of Trains	Planning Capacity of Car**	Planning Capacity of Line
Red Line/North Ashmont-Alewife Braintree-Alewife	6	4	15	180	16,200***
Red Line/South Alewife-Ashmont Alewife-Braintree Park-Quincy	6	3.75	16	180	17,280
Green Line/West Boston College Cleveland Circle Riverside Huntington Ave.	2	1.67	36	130	9,360
Green Line/North Lechmere Service	2	6	10	130	2,600
Orange Line/ North-South Oak Grove-Forest Hills	5	4	15	155	11,625
Blue Line Bowdoin-Wonderland	4	3	20	110	8,800

* Projected headways are based on maintenance of existing headways.

** The MBTA uses these capacity estimates for planning purposes. Heavier loads can be carried and are often observed on the system.

*** Capacity is slightly lower than Red Line/South because the Quincy-Park run is not included.

Excluding the transit trips generated by the former use of the Custom House as a government office building, the redevelopment of the site will generate only 274 new daily transit trips, including 27 in the AM peak hour and 42 in the PM peak hour, as shown in Table 23.

TABLE 23
TRANSIT TRIP GENERATION

	All Transit Trips	New Transit Trips
AM Peak Hour		
In	163	26
Out	4	1
Total	167	27
PM Peak Hour		
In	8	1
Out	178	41
Total	186	42

- Transit Impact Analysis

All the available transit ridership data were collected in 1986 or earlier, when the Custom House was still in use as a Federal office building. Therefore, it is appropriate to consider only the new transit trips when discussing impacts on the transit system. For discussion purposes, the PM peak hour was analyzed; however, figures for the AM peak hour are relatively similar. The 41 new outbound transit trips in the PM peak hour are expected to be distributed among the major transit modes in the same proportions as were observed in the 1982 cordon count of Downtown Boston, and among the seven rapid transit peak load points in proportion to existing volumes. The percentages are given in Table 24.

TABLE 24
DISTRIBUTION OF NEW TRANSIT TRIPS

Transit Mode	Percent	PM Peak Hour Outbound Trips
Bus	18%	7
Commuter Rail	14%	6
Rapid Transit		
Red Line/North	8%	3
Red Line/South	16%	6
Green Line/West	12%	5
Green Line/North	1%	1
Orange Line/North	14%	6
Orange Line/South	9%	4
Blue Line/North	8%	3
Total Rapid Transit	68%	28
Total	100%	41

By 1990, peak hour transit ridership is expected to be considerably greater than the numbers reported in the Existing Conditions chapter. The No-Build ridership figures presented in Table 25 were computed by adding to existing volumes the trips generated by all known background developments which were not occupied when the ridership counts were taken, but are expected to be occupied in 1990.

Table 25 also gives 1990 No-Build ridership as a percentage of 1990 capacity. It indicates that the currently observed capacity shortage on the Green Line/West will remain, as demand increases almost as fast as supply. The Orange Line/North will also experience a capacity shortage, with demand exceeding planning capacity by nine percent. Ridership on all other rapid transit lines will be well below planning capacity.

As shown in the last column of Table 25, the Custom House Redevelopment will have a negligible impact on the rapid transit

system, contributing less than one-tenth of one percent to the ridership at each peak load point in the system. In the PM peak hour outbound, the project will add about one passenger to every eighth car on these critical segments of the network.

TABLE 25
1990 RAPID TRANSIT CAPACITY AND RIDERSHIP
PM PEAK HOUR OUTBOUND

Line/ Segment	Planning Capacity of Line*	No-Build Ridership**	No-Build Percent of Capacity	Project Ridership	Percent of No-Build Ridership
Red/ North	16,200	8,563	53%	3	0.1%
Red/ South	17,280	14,017	81%	6	0.1%
Green/ West	9,360	12,016	128%	5	0.1%
Green/ North	2,600	1,338	51%	1	0.1%
Orange/ North	11,625	12,641	109%	6	0.1%
Orange/ South	11,625	8,742	75%	4	0.1%
Blue/ North	8,800	7,543	86%	3	0.1%

* See Table 22.

** These figures were computed by adding to existing volumes the trips generated by background developments expected to be occupied in 1990.

- Express Bus

Eighteen percent of the project generated transit rider trips (seven in the evening peak hour) are expected to be by bus. Five express routes provide service between the Financial District and suburban areas along the Massachusetts Turnpike. Express bus

service is also available from Haymarket to North Shore coastal communities. Private commuter bus service to the South Shore is provided at South Station. Local bus service is limited and has not been analyzed.

The expanse of the service coupled with the relatively low generation of new trips from the proposed development will result in little or no impact on express bus operation. The MBTA maintains a policy that reduces the potential for standees by releasing buses when seats are filled in order to maintain the high level of ridership. This includes adding buses to the express routes as needed.

PEDESTRIANS

Most pedestrian trips generated by the Custom House will be transit-related (i.e., walking to rapid transit stations or bus stops). It has been estimated that approximately 939 transit-related trips will be generated by the redevelopment's office and museum uses each day. Approximately 19 percent of these trips will occur each peak hour with 167 and 186 in the morning and evening peaks, respectively.

The majority of transit-related trips can be expected to use State Street west of the site for access to the State (Orange/Blue Lines) and Government Center Stations (Green/Blue Lines). Red Line passengers may use several different paths to reach Red Line stations or may also use State Street to reach the Orange and Green Lines for transfer to the Red Line. Blue Line riders are expected to use State Street east of the redevelopment for access to Aquarium Station.

Non-transit related pedestrian trips are defined to be strictly walking trips (i.e., the entire trip is made by walking

and no other mode of travel is used for any portion of the trip). Approximately 663 non-transit pedestrian-trips a day are expected to be generated by the redevelopment, most of which will be associated with the project's museum component (mainly Freedom Trail visitors). However, only small percentages of these daily non-transit related trips occur in the morning and evening peak hours. In the AM peak, an increase of only three walk-trips is projected, while in the PM peak, only 64 walk-trips are projected to occur.

From this discussion, it can be seen that the project will generate 170 pedestrian-trips in the morning peak and 250 pedestrian-trips in the evening peak. These pedestrian volumes average to approximately four additional pedestrians per minute being generated by the Custom House Tower project during each peak hour. Since pedestrian flows were already observed to be relatively light on the block faces and in the crosswalks adjacent to the site, these increases can be considered measurable but insignificant. It can, therefore, be concluded that the peak hour pedestrians generated by the Custom House redevelopment will have no adverse effects on pedestrian conditions within the project study area.

CONSTRUCTION IMPACTS

Construction Employee Trip Generation and Parking

The number of workers required over the 16-month construction period will vary, with an estimated average daily work force of 40 and a peak work force of approximately 75 during the last four months of construction. Trip generation by construction workers is a direct function of employment levels. Assuming an auto occupancy of two or three persons (based on the shortage of parking, current costs of parking and the greater inclination of

construction workers to carpool), the 75 employees during the peak construction period would generate from 25 to 38 vehicle-trips each peak period if all employees arrive by automobile during the same hour. Some of the workers will likely utilize public transportation due to the downtown location of the site and its good accessibility via transit. In addition to these factors, construction workers are expected to travel before the peak commuting hours (working 7:00 AM to 3:30 PM), so they do not add to commuter peak hour traffic. As a result, no significant impact to the area roadway system is anticipated due to construction worker vehicle-trips.

No parking will be available on-site for construction workers. Therefore, the construction workers who do drive will park in available public spaces in area lots or garages or at more remote locations and walk to the site. This situation is common for most downtown construction projects. There have been and will continue to be a large number of ongoing construction projects in the Downtown area. Some workers may park at the Fan Pier lot in South Boston because of the relatively high daily cost of off-street parking in the downtown area. This factor may also encourage lower auto use and higher transit usage.

Lane Restrictions/Street Closures

It is anticipated that construction of the project will take approximately 16 months. During that period, it is proposed to fence in the entire site leaving Central Street unaffected and limiting both India Street and McKinley Square to one lane with existing curbside parking left intact. The commercial vehicle zone located in the parking lane on State Street will also be included within the fenced-in area. During the construction period, the enclosed tract will be used for staging, parking for contractor trailers, and as a maneuvering area for a mobil crane.

These restrictions should not have a serious impact on traffic conditions of surrounding streets, as sufficient capacity exists to handle any traffic which may be diverted. Eventually, the travel and parking lanes on India Street and McKinley Square, and the commercial vehicle parking lane on State Street, will be eliminated so that the pedestrian areas proposed at the base of the site can be constructed. As a result, 18 metered parking spaces will be lost around the site.

Construction Vehicle Routings and Deliveries

The exact source locations of construction materials is not known at this time, but it is expected that all deliveries will access the site via the Central Artery. Deliveries from the north are expected to exit the Central Artery at the Dock Street/Callahan Tunnel off-ramp and then proceed directly to the site via Surface Artery and Central Street. From the south, deliveries will likely exit the Central Artery off-ramp at Northern Avenue, then proceed down Surface Artery to Central Street. Loading/unloading at the Custom House site will occur where it currently does, at the designated zone on the McKinley Square side of the building. Return trips to the north will be via the Dock Square/Sumner Tunnel on-ramp to the Central Artery, while southbound trips will use the Purchase Street on-ramp.

At this time, the average daily number of construction trucks which will be generated by the site is not yet known. However, since this project is a rehabilitation, the delivery of significant quantities of structural or exterior wall materials will not be required. It is known, however, that a low volume of trucks - small panel or stake trucks - with parcels of construction materials small enough to fit inside the existing elevator at the Custom House, are expected each day at the construction site.

TRANSPORTATION MITIGATION AND MONITORING

TRAFFIC MANAGEMENT

Traffic management, as it relates to the Custom House project, has two major components: traffic operations improvements and traffic demand-reduction strategies. The first component seeks to enhance the capacity of existing roadway facilities, while the second targets ways to reduce the volume of traffic on the roadways. In order to realize the greatest benefits, both components of a traffic management plan should be simultaneously implemented.

Intersection Improvements

The project's size characteristics, excellent location with respect to public transportation services, and the CHTA's proposed commitment to various travel demand-reduction strategies all will result in very small traffic impacts at key locations. Nevertheless, CHTA recognizes the desirability of improving traffic operations within the historic Custom House District so as to maximize the efficiency of traffic flow to and from the project site. To this end, CHTA supports the City's efforts to implement the computerized operation of more than 300 signalized intersections in the City, including those in proximity to the redevelopment site. As part of this effort, the allocation of green time at the recently reconstructed Surface Artery/High Street/Atlantic Avenue intersection should be reviewed in order to consider providing increased green time allocation to the Atlantic Avenue approach which currently experiences long delays. This recommendation should be examined by the City, keeping in mind the coordination and progression which has been established along the Surface Artery.

Traffic Reduction Strategies

Reducing the amount of traffic generated by a development is a complementary component to traffic operations improvements necessary to satisfy projected traffic growth. Much can be done to reduce automobile usage and thereby lessen the need for improvements or allow for more efficient use of any improvements provided. The following measures are designed to reduce the number of vehicle trips into the project area during the peak commuting hours. CHTA is committed to implementing them in so far as it is within his ability to do so.

• Ridesharing

Ridesharing is an overall term that refers to encouraging commuters to ride in vehicles with other commuters rather than driving to work alone. The most common forms of ridesharing are carpools and vanpools. Increased ridesharing decreases the number of vehicles using the roadways, and thus decreases the degree of congestion encountered. An additional benefit is reduced fuel consumption, as fewer vehicle miles will be traveled.

CHTA is committed to the following ridesharing incentives:

1. Joint participation in carpool/vanpool matching services programs with other nearby tenants, organizations and companies.

2. Provision of promotional materials on ridesharing to building employees.

3. Coordination with CARAVAN (an organization which leases commuter vans and provides administrative and organizational assistance) or other van-leasing programs.

- **Public Transportation**

Another major way to reduce the number of vehicles on the roadways is to encourage employees to use public transportation as an alternative means of traveling to work. The proposed project site is located within walking distance (2,500 feet) of the South Station commuter trains, the Federal Street express bus stop, the Rowes Wharf commuter boat terminal, and all lines of the rapid transit system. This provides an excellent opportunity for the project to generate a high proportion of transit users. CHTA will encourage transit usage through the following measures:

1. Arrange for a convenient location for sale of MBTA passes and private bus line tickets with other nearby tenants, organizations and companies.

2. Encouraging tenants to subsidize a portion of their employees' public transportation costs.

3. Provision of commuter bus, commuter rail and commuter boat schedules.

4. Provision of promotional and informational materials for all modes of public transportation.

- **Alternative Work Schedules**

Alternative work schedules offer a means of reducing peak hour demands on the roadway and transit systems by shifting

travel to non-peak periods or by reducing the total number of trips made per week. The major schedule alternatives are:

1. Staggered work hours - Generally are set up in so as to assign groups of employees staggered starting times, typically at 15-minute intervals, spread over a one or two-hour period.

2. Flexible work hours - Allow employees to choose their own starting and finishing times, so long as they are present during a central part of the day (called core time).

3. Compressed work week - Involves shifting some workers from a standard five days per week, eight hours per day schedule to fewer days of longer hours (e.g., four days per week, ten hours per day).

CHTA has agreed to the following measures in this category:

1. Encouraging tenants to implement one of the above concepts.

2. Make building services such as heat, air conditioning, etc., available from 6:00 AM to 7:00 PM at no cost premium to encourage tenant shifts in employee start/end times.

Other Transportation Improvements

In addition to roadway improvements and traffic reduction strategies (which generally apply to commuters), there are a variety of other measures which may be implemented to improve traffic conditions as they relate to the proposed historic

rehabilitation project. Measures which would further this goal include:

- Delivery Vehicles

1. Provision of a sufficient curb cut-out adjacent to the site off Central Street designated as a loading/unloading zone for all delivery vehicles (with the exception of courier services) in order to minimize any on-street activity. deliveries will then be hand-trucked from the zone to the building entrance located off the proposed McKinley Square Plaza. Deliveries to the building from any location other than the McKinley Square Plaza service entrance will be prohibited. No deliveries will be accepted through the main tenant entrance on State Street.

2. Encourage all tenant delivery vehicles (with the exception of courier services) to use off-peak hours, which include all times other than 7:00-10:00 AM and 3:00-6:00 PM weekdays. This includes delivery vehicles needed when exhibits are changed at the proposed museum.

3. Collection boxes for major courier services will be located in areas convenient to the main tenant entrance on State Street where a sufficient curb cut-out adjacent to the site, similar to the one proposed on Central Street, will be located. Courier services will be required to use the tenant entrance and drop-offs/pick-ups will not be accepted at other locations, thereby minimizing impact to street traffic. The State Street curb cut-out will also be used as a drop-off area for taxis and other passenger vehicles.

- **Taxis**

1. Presently, the closest major taxi stand to the project is at the Marriott Long Wharf. It provides convenient service for users in the area even though it is not anticipated that the demand for taxi service will increase significantly due to the development of this project.

2. Taxi drop-offs would occur primarily at the State Street cutout.

- **Pedestrians**

Pedestrian pathways are currently provided adjacent to the site in the form of sidewalks on India, State and Central Streets. As part of the Custom House development, CHTA intends to further define and enhance these pedestrian linkages in the following manner:

1. Creation of pedestrian plazas on the India Street and McKinley Square sides of the site. The developer hopes to extend the pedestrian plazas and walkways which surround Faneuil Hall and Quincy Market to the area surrounding the Custom House Tower. These plazas would remove the large paved areas and parking from around the base of the structure which detracts from its historic prominence.

2. Provide upgraded lighting around the building perimeter as required for appropriate lighting and enhancement of the project design.

• Other

To further the Access Plan goals and objectives, the Custom House Tower Associates will implement the following measures:

1. Provision of a secure bicycle storage area for use by employees who wish to commute via bicycle.

2. Provision of staff support to coordinate all of the above transportation mitigation efforts and provision of a representative who would be responsible for the dissemination of materials and coordination of activities described above.

3. Regular dissemination of information to building tenants concerning all of the above by a no less than quarterly newsletter or by special topic memoranda as appropriate.

CONSTRUCTION MANAGEMENT

An important component of the Access Plan is an effective series of measures designed to minimize traffic flow and safety impacts during the construction phase. Summarized below are several measures which the developer and the construction contractor will incorporate into the construction management plan for the project.

1. Secure fencing will be provided around the entire site leaving Central Street unaffected and limiting both India Street and McKinley Square to one lane with the existing curbside parking left intact. The parking lane designated for commercial vehicles only adjacent to the site

on State Street will also be enclosed within the fenced-in area. Due to the small traffic volumes which circulate around the base of the site, these lane restrictions will have little affect on traffic operations. Eventually, the travel and parking lanes on India Street and McKinley Street and the commercial vehicle parking lane on State Street will be eliminated so that the pedestrian areas proposed at the base of the site can be constructed.

2. On-site staging areas for construction materials are to be located adjacent to the site along India Street within the fenced-in area. Here, space will be provided for subcontractor trailers.

3. Public access at the four corners of the site may occasionally have to be restricted so that a crane can easily be maneuvered at the base of the building. These closings, if necessary, would only be for a short time when the granite roof on the original structure is refurbished. Optimally, the mobil crane will be able to accomplish this work entirely within the fenced area.

4. During construction, a pedestrian walkway adjacent to the site along State Street, where pedestrian flows are heaviest, will be delineated with Jersey barriers. Overhead protection will not be required due to the small amount of work which needs to be performed on the exterior of the building.

5. Construction worker parking will not be permitted on-site or adjacent to the construction area. All construction workers will be required to access the site by public transportation, ridesharing, or by parking at off-site

locations, particularly on the South Boston side of the Fort Point Channel.

6. Construction worker shifts will start at 7:00 AM and end at 3:30 PM so that workers will arrive prior to the morning peak hour and leave prior to the PM peak hour.

MONITORING PROGRAM

1. In the Probable Project Impacts section, estimates were made for vehicle trip generation which were the result of several combined factors. The most significant factors affecting the number of vehicle trips are:

   - Percent transit use (share of project generated person trips using public transportation).

   - Vehicle occupancy rate (average number of people in each vehicle coming to or leaving the project).

   - Peak hour percentage (the portion of daily trips generated by the project which occur during the AM or PM peak hour).

   In order to minimize vehicular travel, it would be desirable to increase the number of person trips by public transportation and to increase the vehicle occupancy rate of those vehicles traveling to the project. Additionally, a shift in travel to times other than the peak hours would also lesson the impacts of vehicular travel to the site. These factors serve as a basis for establishing a set of access goals for the project.

Table 26 lists each of the three trip generation factors, along with the value assumed for projecting project generated trips in the Probable Project Impacts section. All figures in the table refer to office work trips, which constitute approximately 93 percent of both the project's vehicle trip generation and transit trip generation during the peak commuting hours. Changes in the value of each factor may be considered as a measure of effectiveness for the proposed mitigation measures. The mitigation action to improve each factor is also listed, along with the goal set for each factor with implementation of the Access Plan mitigation measures at full project buildout and occupancy. The lower portion of the table summarizes the AM and PM vehicle and transit trips projected in the original impact analysis and those projected to result from the revised trip generation factors. These improved trip generation factors will become the Access Plan goals.

TABLE 26
ACCESS PLAN GOALS
FOR OFFICE WORK TRIPS

		Analysis Estimates	Mitigation Action	Goal
A. Trip Generation Factors				
Percent by Transit		70%	Transit Incentive	75%
Vehicle Occupancy Rate		1.8	Ridesharing	2.0
Peak Hour Percentage		55%	Alternative Work Hours	50%
B. Resulting Peak Hour Trips				
Vehicle Trips:	AM In	65		49
	PM Out	65		49
Transit Trips:	AM In	151		147
	PM Out	151		147

2. As a follow-up to the setting of Access Plan goals, CHTA will provide annual management reports to the City on compliance with the stated goals and objectives, as well as other areas of the Access Plan. In order to accomplish this, the Custom House Tower Associates will annually conduct a survey of both employees and visitors to the building to determine person trip generation rates, transportation mode splits, vehicle occupancy, peak hour travel percentages, and parking location. Additionally, data on employee and visitor origin and destination locations will be collected as part of the survey work. These data will be collected in light of the City's requirements.

3. CHTA also commits to working with the City to address any other transportation-related issues.

APPENDIX F

CUSTOM
HOUSE
TOWER
ASSOCIATES

October 28, 1987

Walter Adams
Chief Plans Examiner
Inspectional Services Department
City of Boston
1010 Massachusetts Avenue
Boston, MA 02118

Dear Walter:

The following memorandum will serve to formalize the various documentation, correspondence and the presentation which Custom House Tower Associates has had with the Inspectional Services Department of the City of Boston over the past year. Custom House Tower Associates wishes to thank you for the time you have spent in touring the building and discussing our development plans for the building.

As previously discussed, Custom House Tower Associates has not been selected as developer for the project, but will enter the upcoming competition for the development rights. Should we be designated developer for the Custom House Tower, we intend to use the contents of this memorandum as the basis for code compliance and as a design guideline for the renovation of the existing structure.

Again, we appreciate the time which you and your staff have taken in understanding the issues involved with the building and responding to our concerns. The attached document is the basis of the Custom House Tower Associates code compliance strategy. Please feel free to reach me at 482-2375.

Regards,

Stanley H. Durlacher
Construction Manager

SHD/dgm

CONTACT: James B. White • Palmer & Dodge • One Beacon Street • Boston, MA 02108 • (617) 227-4400

1.0 BACKGROUND

When Custom House Tower Associates initially reviewed the existing structure and the appropriateness for our intended use, it became quite evident that the redevelopment plans would be strongly influenced by the "input" of several key groups and City departments. For example, the Department of the Interior and Landmarks Commission will determine the extent of the alterations to the exterior of the structure; Boston Traffic and Parking and the Boston Redevelopment Authority would determine the extent of the development of the urban space at the base of the tower; and the Inspectional Services Department would determine the feasibility of our redevelopment plans for the new mechanical, electrical, plumbing, life safety and fire protection systems. The desire to seek such input led us to communicate with Commissioner Sommers in May of 1987 and seek to present our ideas to the Inspectional Services Department. Commissioner Sommers endorsed the early exchange of ideas which led to a tour of the building on July 17, 1987, a presentation on September 16, 1987 and subsequently, the writing of this memorandum.

To a great extent, the economic feasibility for the redevelopment of the Custom House Tower is tied to how the State Building Code is interpreted and applied to the Custom House Tower under Article 22 of the Code. This Article is intended to be used for the repair, alteration, addition and change of use of existing buildings without meeting all of the new construction code requirements. Appendix T further states that in order to use Article 22, the following conditions must be met:

1.) All hazardous conditions must be corrected;
2.) the existing building becomes the minimum performance standard;
3.) the degree of compliance of the building after changes must not be below that existing before the changes.

Custom House Tower Associates development plans meet the criteria for Article 22 and Appendix T and thus, the following Code analysis will discuss the areas where variances will be required for non-complying existing conditions, where compliance alternatives will be sought, and where new complying systems will be installed.

2.0 TYPE OF CONSTRUCTION

On the July 17, 1987 tour of the building with Messrs. Adams and Morin of the Inspectional Services Department , it was observed that the existing building was built of a "fireproof" type of construction which consisted of structural steel framing encased in concrete. While this may be rated as Type 1 construction, it was generally agreed that the Custom House Tower should be viewed as a Type 2-A protected/non-combustible equivalent construction. Any and all structural revisions and alterations will be of a Type 2-A construction, having a minimum of 1 3/8" cementitious covering on columns, 3/4" cemetitious covering on the beams.

3.0 BUILDING USES

The use of Article 22 is predicated upon the fact that the proposed Use Groups hazard index will not be increased over the current hazard index. We understand that since the Custom House Tower was formerly a federal building and therefore exempt from City of Boston zoning, the building had no listed occupancy. Most recently, the building was used for offices and a tax court which would have a Business (B) and Assembly (A) occupancy, respectively, under the State Building Code. The hazard indices would be 4, Use Group A3, and 2, Use Group B, from Table 1 of the Code. The Custom House Tower Associates proposal suggests an Assembly Use Group (A) for the Museum function, located in the original 1847 structure, and a Business Use Group (B) for the office functions which will be located in the Tower structure. Note that although the 25th Floor Observation Deck will have limited public access, the occupancy will be limited to under 50 people. Thus, the 25th Floor will be able to have a B Use Group.

4.0 BUILDING SYSTEMS - EXISTING LIMITATIONS & CUSTOM HOUSE TOWER ASSOCIATES PROPOSED IMPROVEMENTS

4.1 EGRESS

The current egress system in the Custom House is, in our opinion, unacceptable in its present state. Without a lengthy description of the current system, the Custom House Tower Associates proposal envisions the following changes:

1.) the addition of a second emergency exit stair located in the N.E. portion of the Tower which will start at the 20th floor and extend through the 25th floor. This additional stair will not conform to current codes relating to stair width and riser/tread relationships but will replicate the N.E. tower stairs which exist from the 20th floor to the 3rd floor. It was agreed that retaining the existing stair configuration, eventhough it does not meet Code, provvided a safer condition than varying the stair conditions wherever the stairs were modified. It was further agreed that although the riser/tread configurations were acceptable, there would be no winder type stairs used.

2.) Where the N.E. tower stair transfers at the ceiling of the Dome space to the S.E. corner of the Rotunda, the stair will be extended down to the ground level in a new stair. This stair will also replicate the tread/riser and width relationships of the existing, non-conforming stair.

3.) The existing SW stair tower extends from the 25th floor to the ground floor. This stairwell will be modified on the 18th through 25th floors to accomodate the elimination of the transfer elevator steps on 18 and to increase the cab depth for a new transfer elevator. The modifications will replicate the width and tread/riser configurations of the current non-conforming stair.

4.) The SW stair tower will have a smoke barrier and door installed at the dome level which will create the airlock for stair pressurization. Further study is required to solve the issue of pressurizing the grand staircase in the SW corner from the third to the first floor where the occupants can exit to the outside. If no acceptable solutions are found, a variance will be sought to accept this existing condition.

5.) All entrances to the emergency stairs will have new rated enclosures and doors to accomodate current codes.

6.) The SW stairwell windows which look into Elevator Shaft #4 will be eliminated and infilled with a rated partition system.

4.2 HANDICAPPED ACCESSIBILITY

In its existing state, the Custom House Tower has a reasonable degree of accessibility for handicapped persons. The Custom House Tower Associates proposal will seek to have all occupied portions accessible through the correction of the following issues:

1.) The Museum entrance, for all but handicapped visitors, will be at the top of the grand staircase facing India Street. The handicapped entrance will be at grade level off of the State Street entrance. The visitor will proceed, at grade level, to an elevator entrance located at the end of a corridor immediately prior to entering the ground level rotunda space.

Handicapped tenants or visitors for the Tower offices will proceed into the ground level rotunda and onto the high speed elevators. The entire route is at grade level.

2.) The Museum will be served by a four stop hydraulic elevator which will be fully handicapped equipped. There is an elevation change of approximately 24 inches in height between the third floor rotunda space and the third floor exhibition wings to the North and South. The handicapped elevator landing will be at the exhibition wing elevation (+24" relative dimension). Thus, the handicapped visitor may enter the exhibition spaces at the proper elevation. In order to reach the lower (-24" relative dimension) elevation in the third floor rotunda space, a ramp will be provided which will slope from the elevator landing area to the South, across the adjacent elevator shafts and terminate at the rotunda base elevation.

3.) In order to reach floors 19 to 25, a visitor must transfer from the main elevator bank to the upper level shuttle elevator at the 18th floor. The landing of the shuttle elevator is currently 18" higher than the landings for the main elevator bank. Custom House Tower Associates proposal will raise the landing on elevator #4 to coincide with that of the shuttle elevator. Coupled with a small ramp system, this will allow handicapped visitors to access the upper level, regardless of the selection of elevators in the high rise bank.

4.) The current shuttle elevator cannot accomodate wheel chairs due to its small 3'8" depth and door configuration. To remedy this situation, Custom House Tower Associates proposal will create a new elevator shaft and install a larger cab which meets the minimum handicapped dimensions.

4.3 ENERGY COMPLIANCE

As allowed under Article 22, alterations to any of the existing building elements will comply with Table 2207. Thus, any new components, such as fenestration, will meet the current energy requirements for that particular component. Thus, the new mechanical systems will have the proper efficiency and meet the energy codes in that respect, but will be sized to accomodate the loads for the unaltered building.

4.4 COMPLIANCE WITH SECTION 431

The Custom House Tower has had several modifications and additions to its building systems since 1915 in an effort to meet current Codes. However, the structure does not meet the provisions of Section 431 of the Code which address the applicable standards for buildings which are more than 70 feet above mean grade. The following system descriptions outline Custom House Tower Associates approach to complying or seeking variances for the hi-rise code.

1.) The building is currently outfitted with an automatic fire supression system. The existing electric booster pump is undersized and will be replaced with a new booster pump sized for the hydraulic requirements of the building. The majority of the existing system will be reused although the west side sprinkler riser will be relocated into a chase in the men's room. In the Tower offices, the branch distribution and heads will remain active during the construction except for system modifications. The heads will be relocated during the tenant finish part of the project.

In the Museum, the exhibition wings will be fully sprinklered. However, the rotunda spaces, with their immense volume and Landmark status will not, in all likelihood, be able to comply with current Codes and will require a variance. Smoke detection will be provided as a compliance alternative for these areas.

The existing supervisory Autocall system for the sprinklers will be modified to meet current codes.

2.) The existing Alarm and Communications systems in the building do not comply with Code. There is, however, a reasonable basis from which to begin modifications. The Custom House Tower Associates proposal will provide voice alarm, public address, and other annunciation and communications systems which fully comply with Codes.

Also, the Custom House Tower Associates plans will provide for full Fire Department communication systems. The stairwells and Fire Command Center, elevator machine rooms, and switch gear room will be equipped with phone cabinets and phones. Smoke and heat detection systems will be provided as required by Code.

3.) The Custom House Tower Associates ground floor plans indicate that immediately upon enetering the Custom House Tower through the State Street entrance, the Fire Command Center will be located on the east side of the main corridor. The Fire Command Center will be equipped with modern systems and meet the location requirements of the Boston Fire Department.

4.) Smoke control systems do not currently exist within the Custom House Tower. The rotunda spaces between the ground and first floor levels will be separated by a thick glass plate which covers the floor opening of the occulus. This will provide a smoke separation while providing the same visual contact between the Office Tower lobby and the main level of the Museum.

The rotunda will be smoke evacuated through the four existing square grills located immediately under the frieze at the perimeter at the base of the rotunda dome. The evacuation fans will be located in the area above the rotunda and discharged through the large exterior grillage located underneath the fourth floor of the Office Tower.

The stair wells in the NE and SW corners will have a stairwell pressurization system. The NE stair tower will have full pressurization from the 25th floor down to the ground floor. As discussed in the egress section, the SW stairwell will have full smoke pressurization from the 25th floor to the top of the third floor which is the highest level of the Museum. We feel that this condition will require a variance if no acceptable solution can be found.

Since the Office Tower has operable windows, the Custom House Tower Associates proposal does not include mechanical smoke removal for the typical office floors. Also, the existing building structure makes the introduction of new shafts, which would be required for smoke evacuation, an impractical approach. Further, the Landmarks aspect of the Custom House Tower renovation requires no changes to the exterior fenestration or walls and thus makes the introduction of grillage impossible. This issue will require a variance.

5.) Emergency Systems will be provided as outlined in Section 431.9. Custom House Tower Associates will provide an emergency generator of sufficient size to ensure the operation of the fire protection equipment; the mechanical pressurization and evacuation fans; the elevators; the emergency lighting; stairway door controls; annunciation and communication systems.

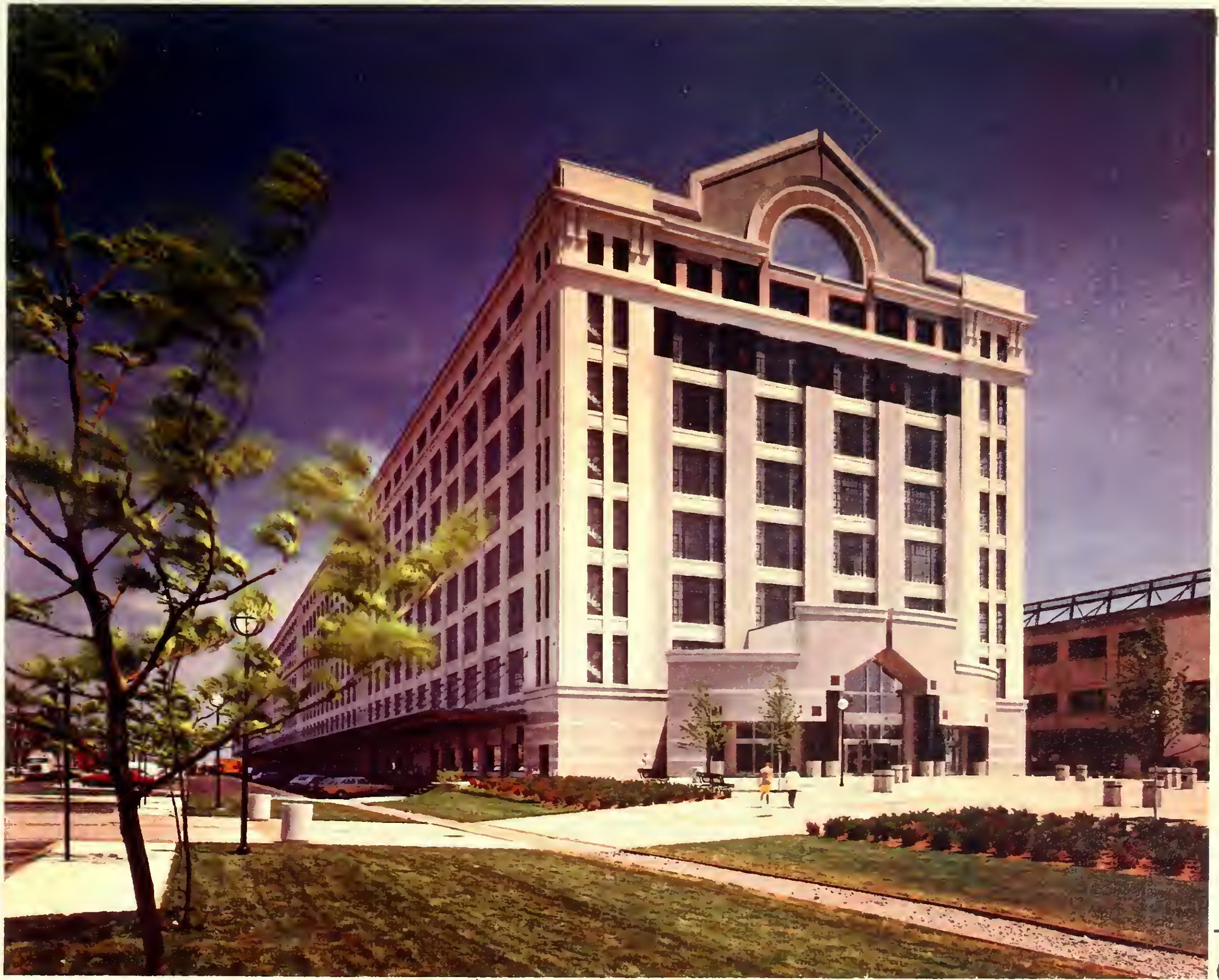
5.0 CONCLUSION

This brief outline summarizes the discussions and presentations made to date concerning the renovations planned under the Custom House Tower Associates proposal. While Custom House Tower Associates has not yet been designated by the Boston Redevelopment Authority ("BRA") as developer for the project, these discussions have substantial impact upon our proposal to the BRA. When the designation occurs, Custom House Tower Associates proposes to proceed with the design of the project using these discussions as a conceptual basis on which to go forward. Therefore, it is important that the Inspectional Services Department personnel respond with any corrections or note any inconsistencies with the conceptual documents or presentations.

Custom House Tower Associates wishes to thank the following Inspectional Services Department Personnel for their time and interest in discussing the Custom House Tower project:

Commissioner Sommers
Mr. Walter Adams
Mr. Ken Morin
Mr. Paul Donga
Mr. Robert Fairbanks
Mr. Tom McNicholas.

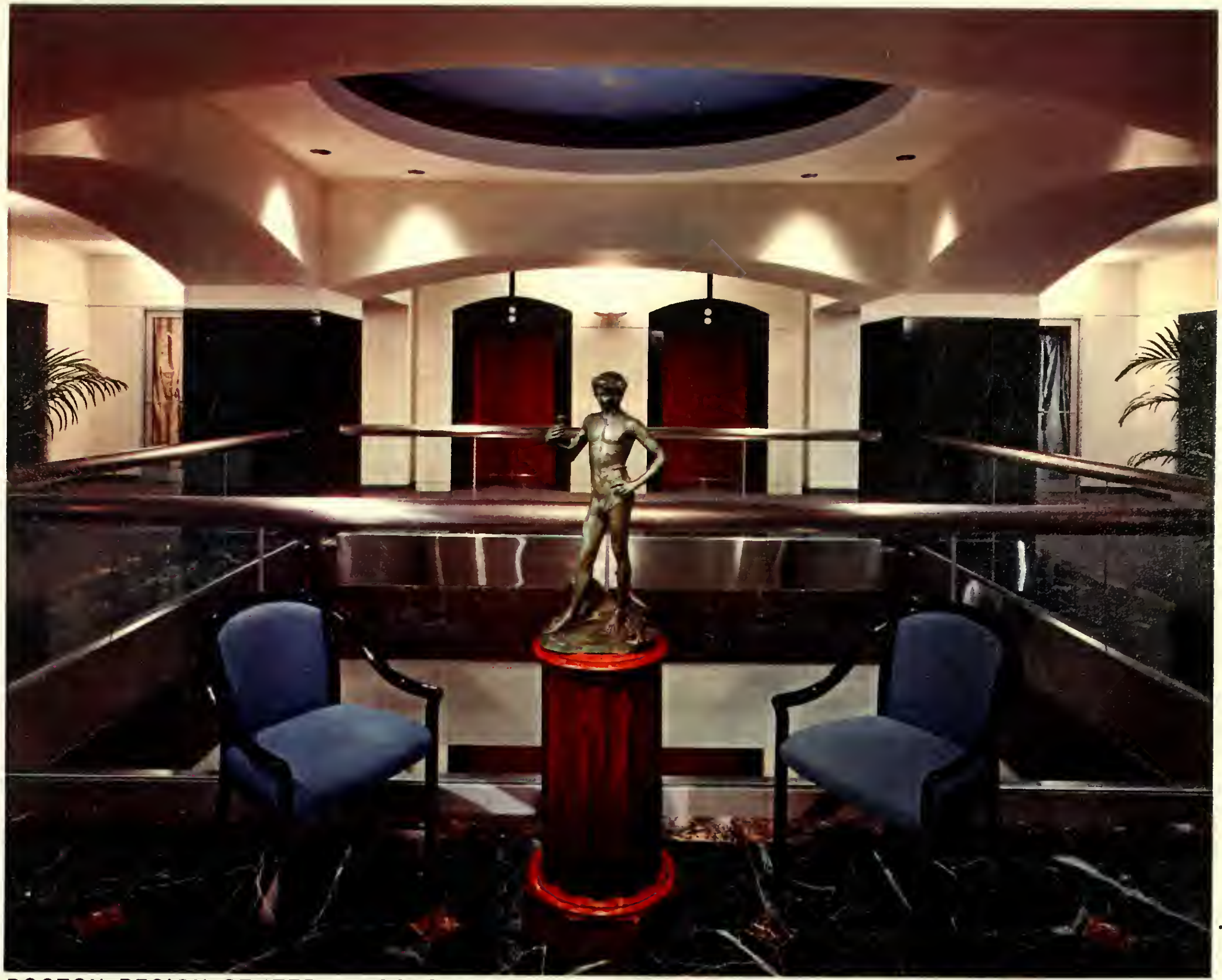
APPENDIX G



TRAMMELL
CROW CO.

BOSTON DESIGN CENTER - BOSTON, MA   Project Manager : Stanley H. Durlacher
Tenant Coordinator: Deana G. Montgomery

Developed by Dallas Market Center   (an affiliate of Trammell Crow Co.)
and Richard A. Flier Interests



TRAMMELL
CROW CO.

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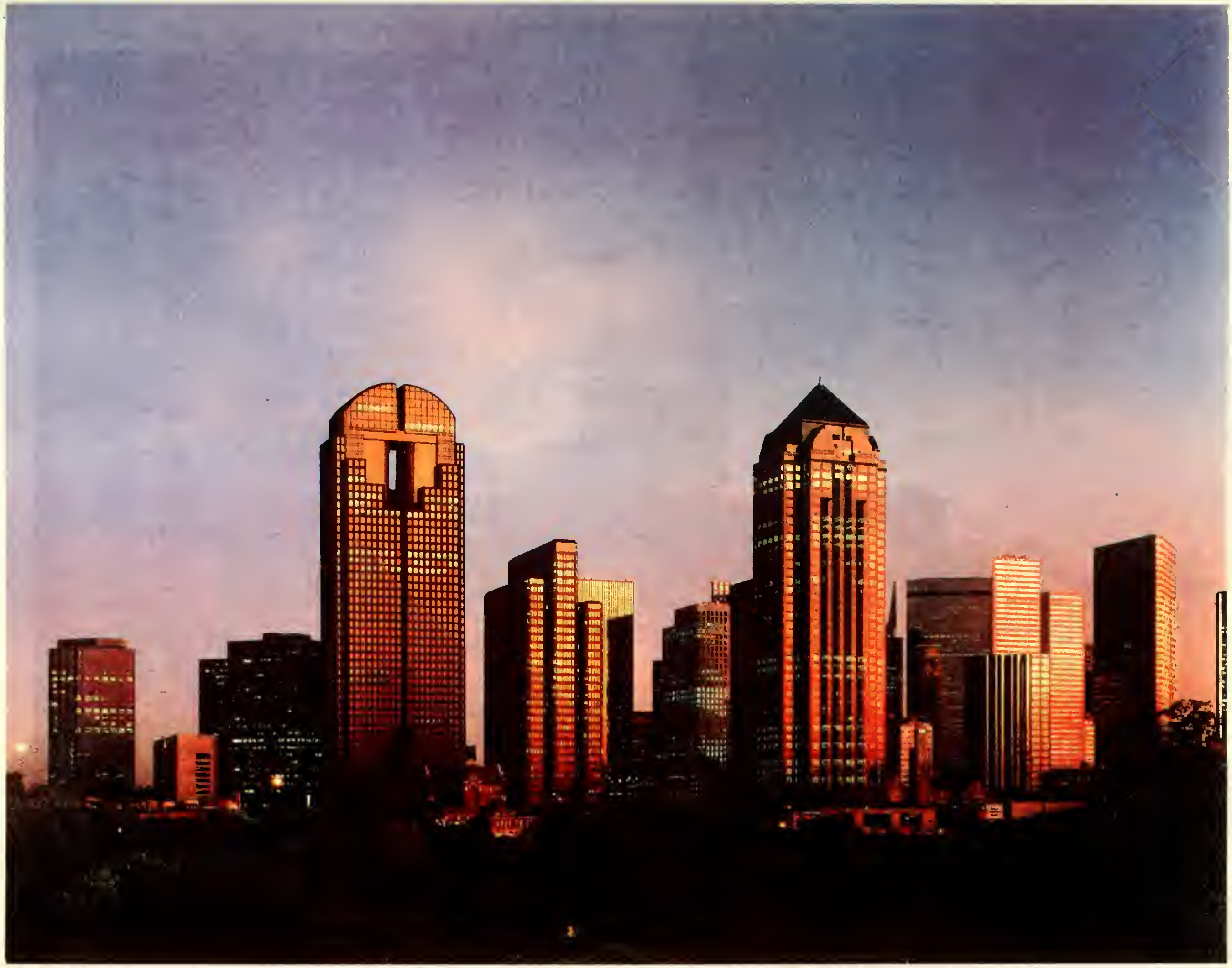


TRAMMEL
CROW CO.

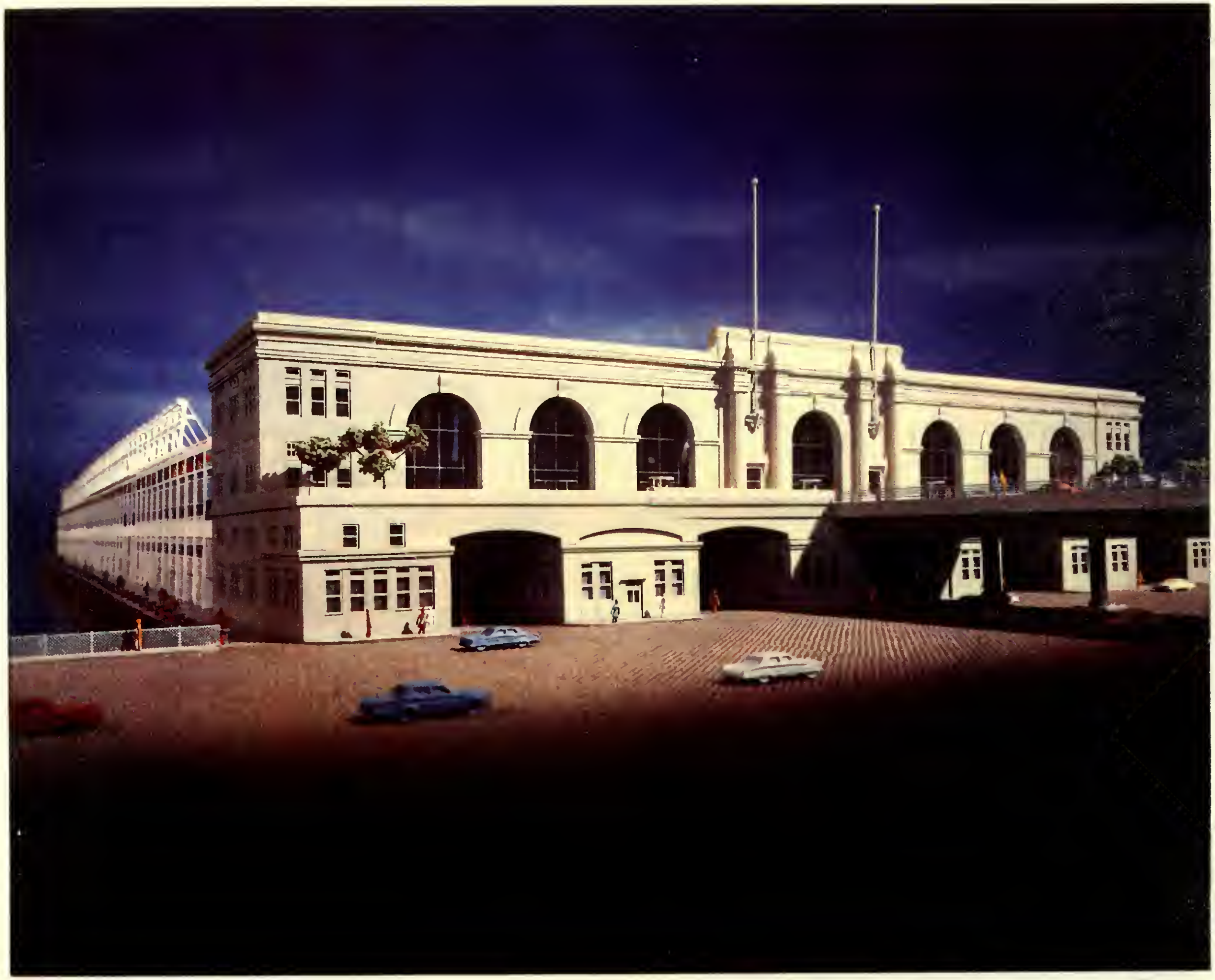
Texas Commerce Bank Tower SanJacinto Tower LTV Tower

Milwauke Center – Milwauke, WI

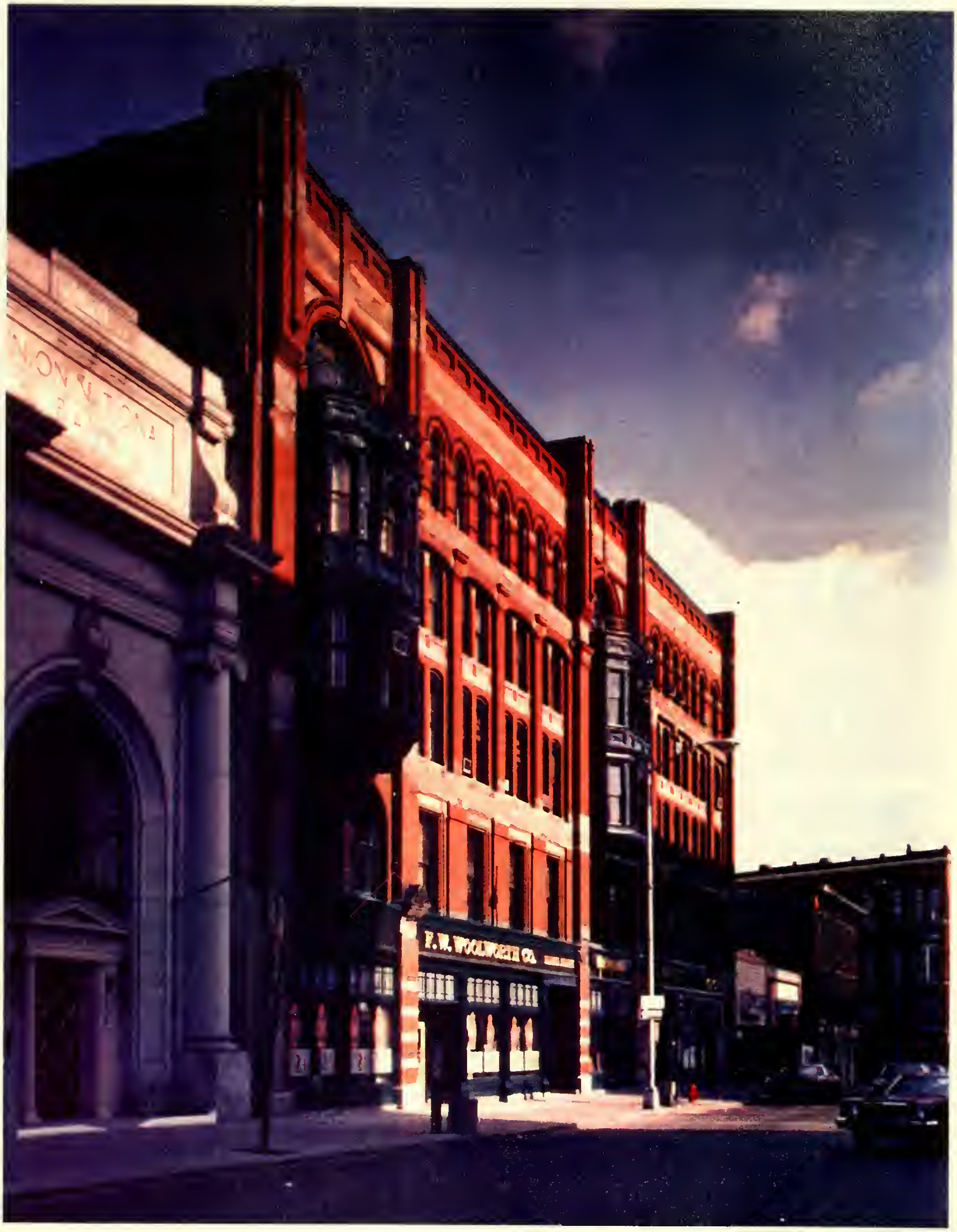
TRAMMELL
CROW CO.

Embarcadero Center – San Francisco, CA

TRAMMELL
CROW CO.



Commonwealth Pier Redevelopment Director of Design & Construction Stanley H. Durlacher
BOSCOM



HILDRETH BUILDING – LOWELL, MA

DEAN
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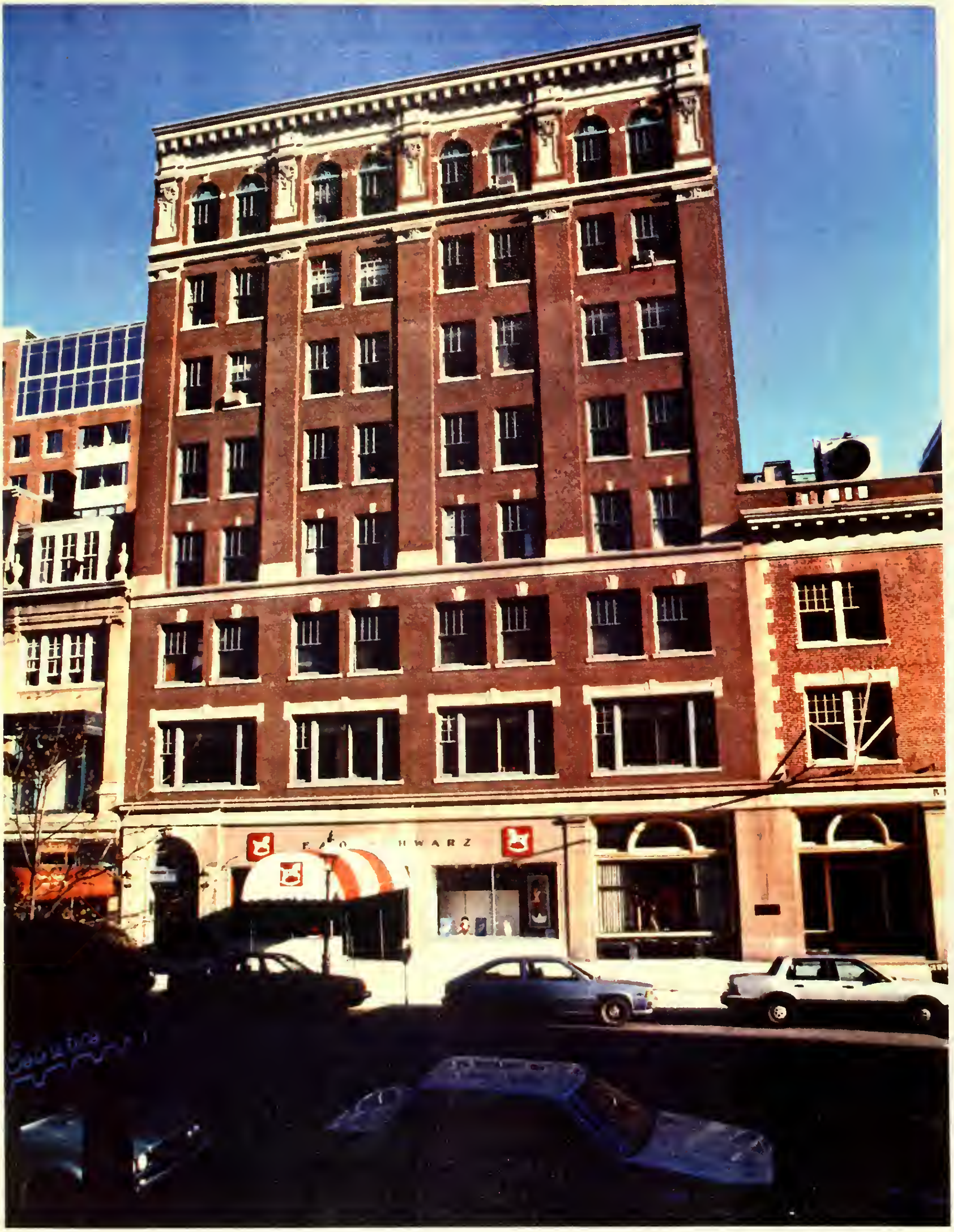
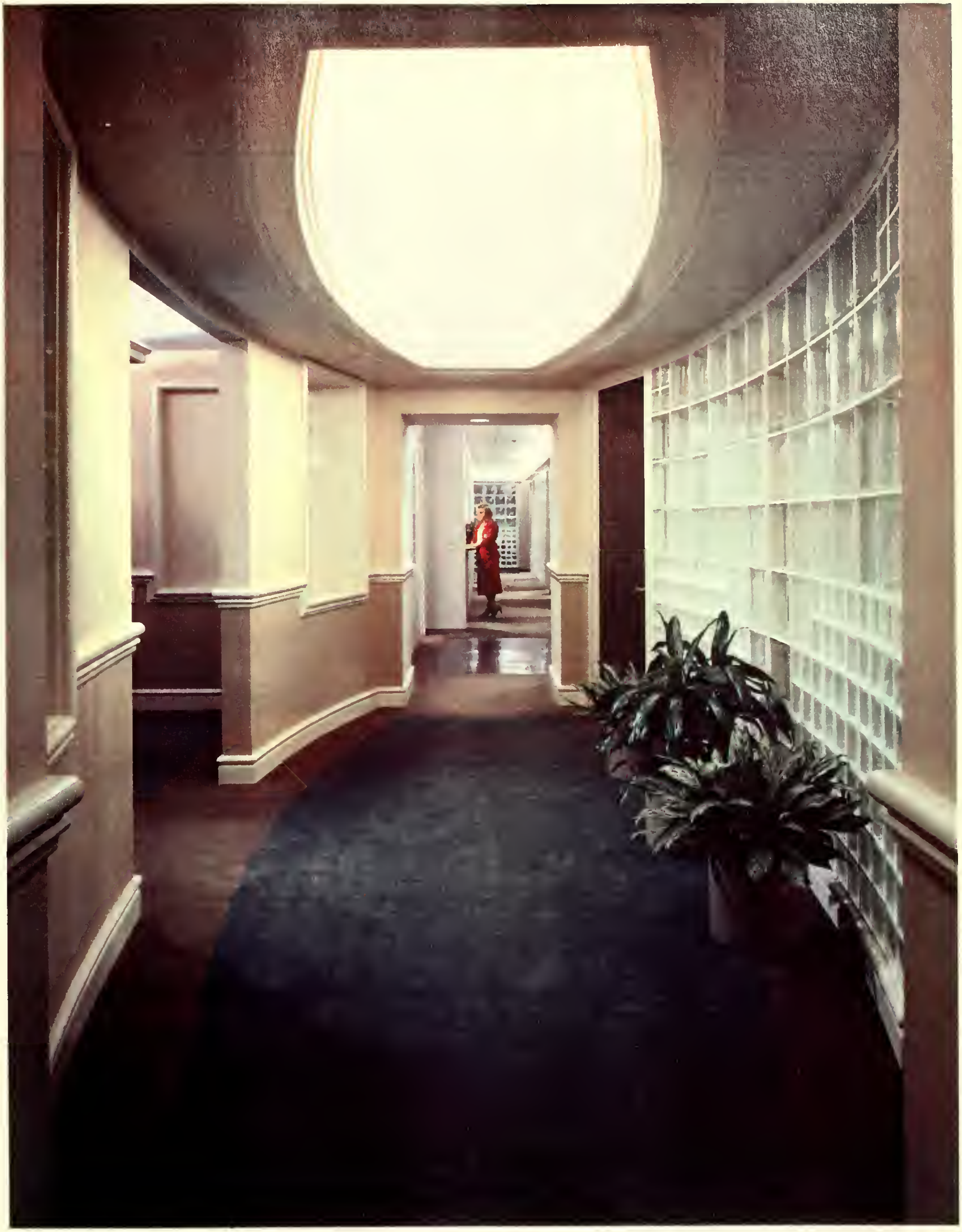


38 NEWBURY ST. - BOSTON, MA

DEAN
TUCKER
SHAW



SALEM, SAXON & NIELSON, PA – TAMPA, FL

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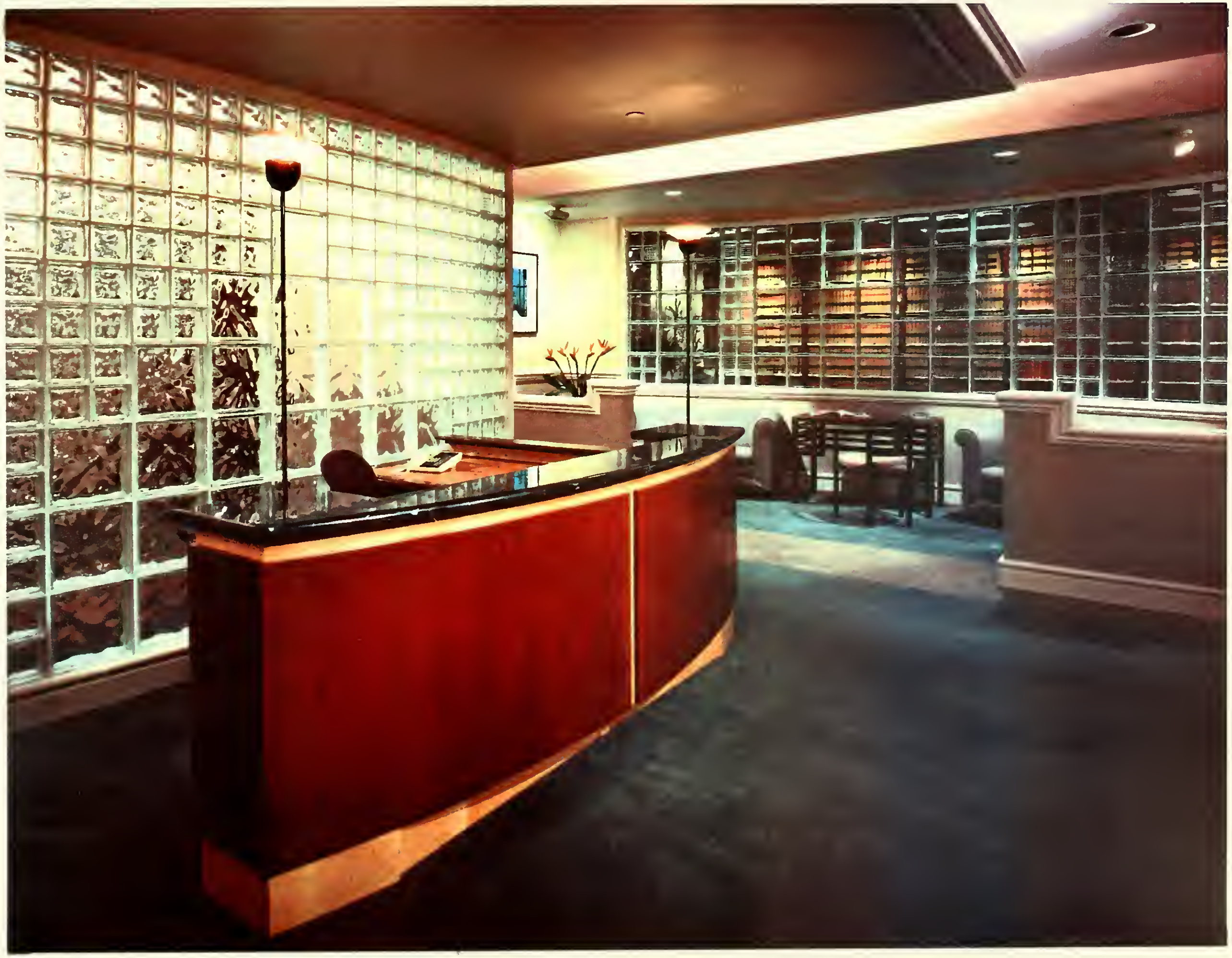

SALEM, SAXON & NIELSEN, PA – TAMPA, FL

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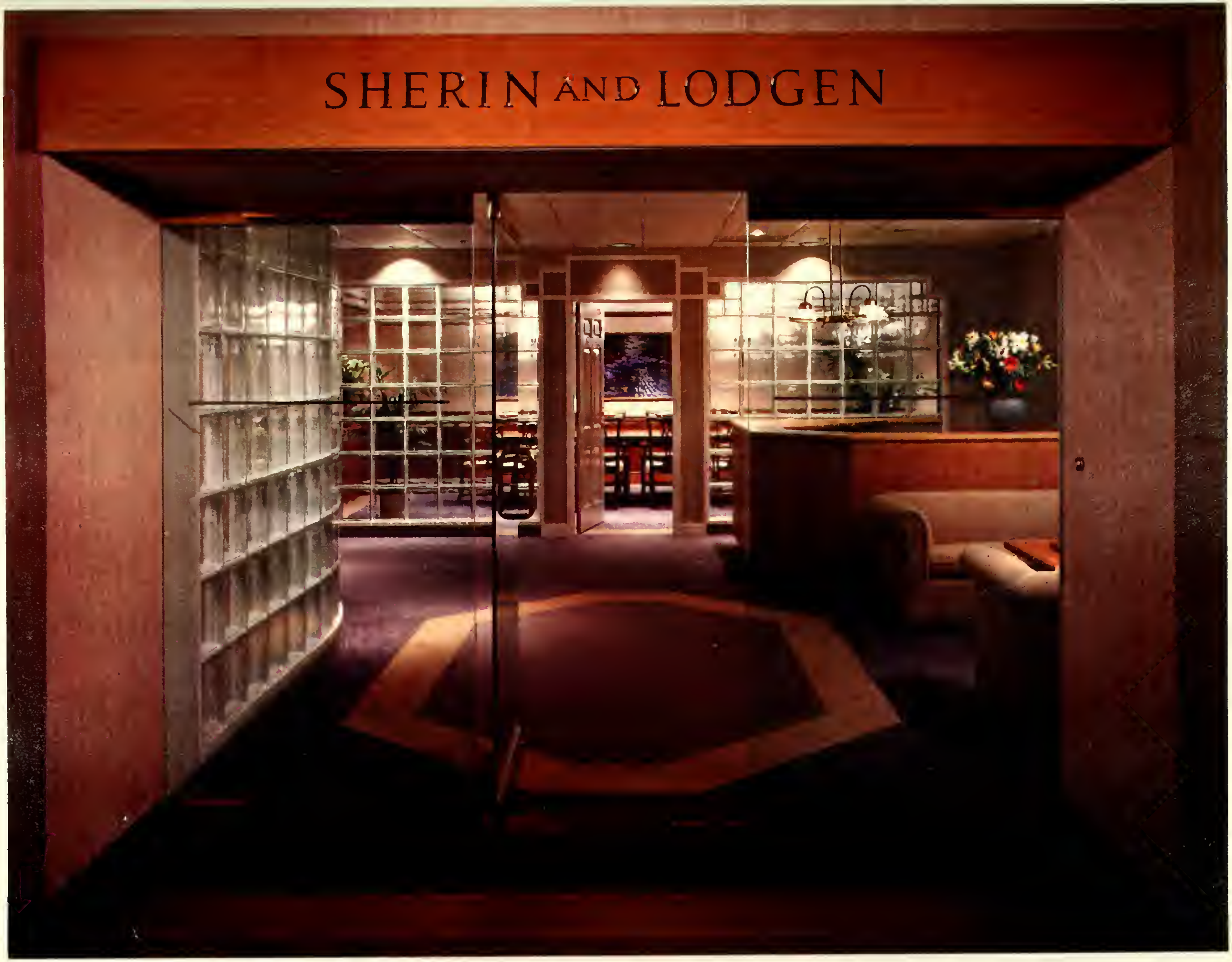

SHERIN AND LODGEN – BOSTON, MA

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TUCKER
SHAW

DEAN
TUCKER
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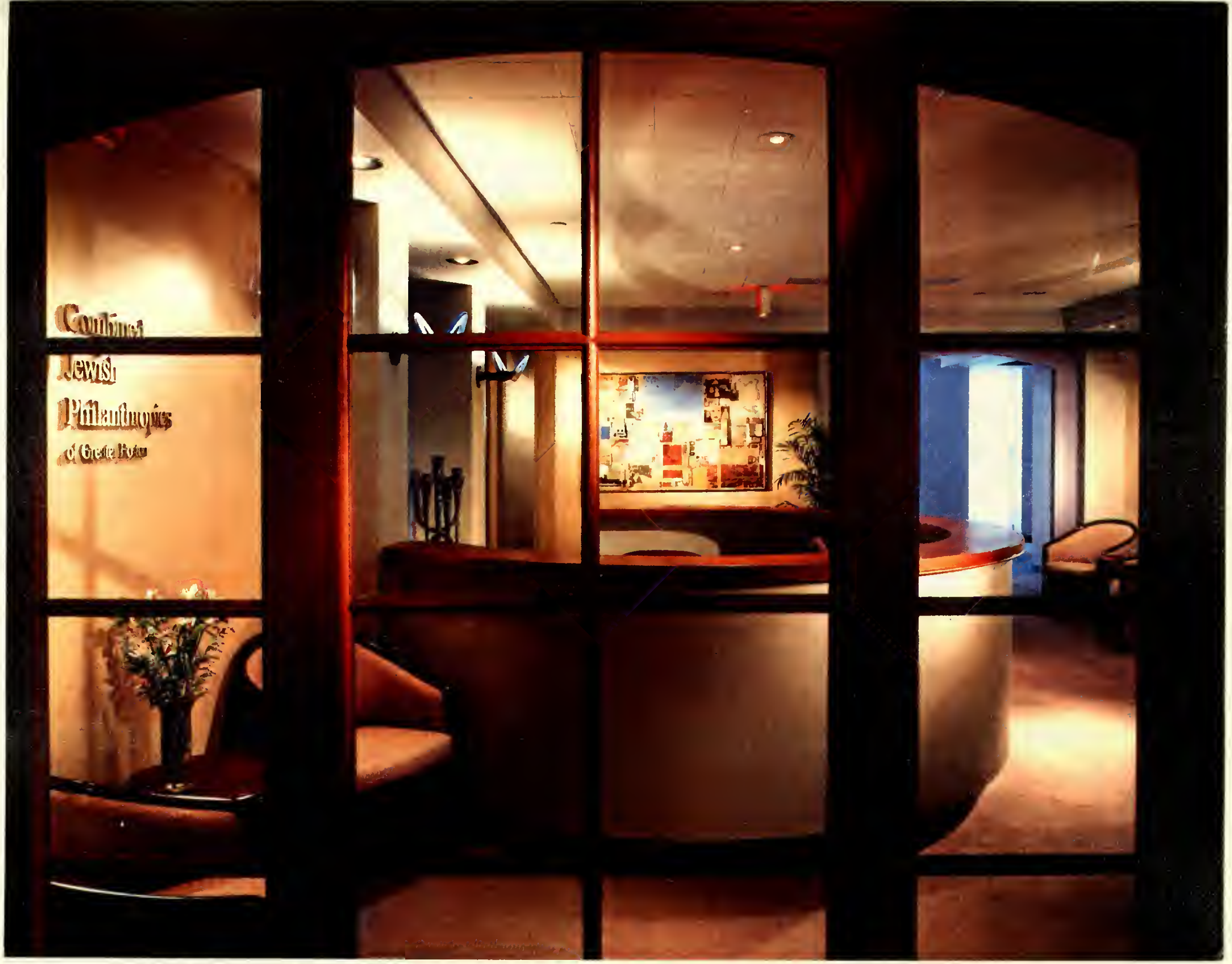
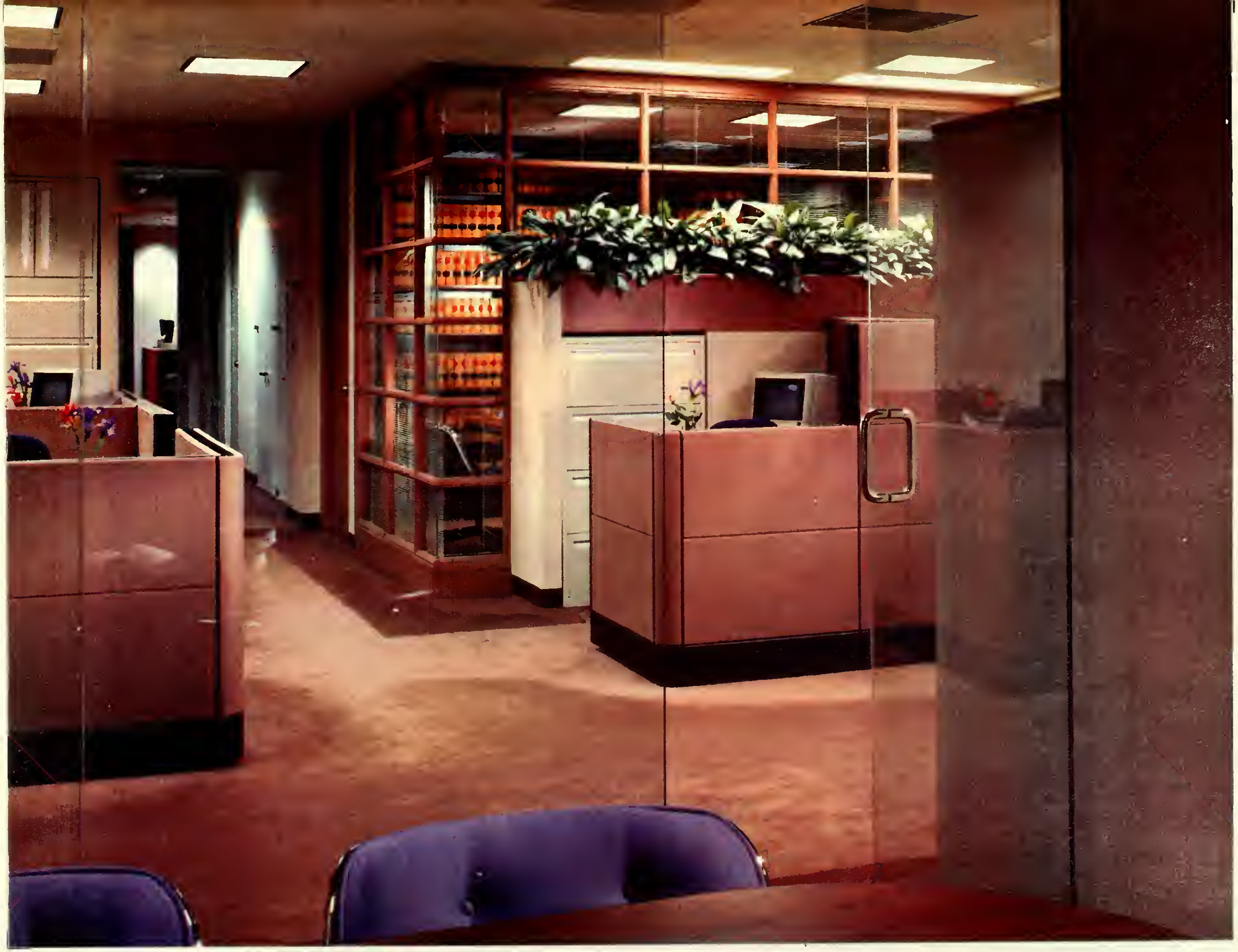


COMBINED JEWISH PHILANTHROPIES – BOSTON, MA



PALMER & DODGE – BOSTON, MA

DEAN
TUCKER
SHAW

NATIONAL MENTOR INC. – BOSTON, MA

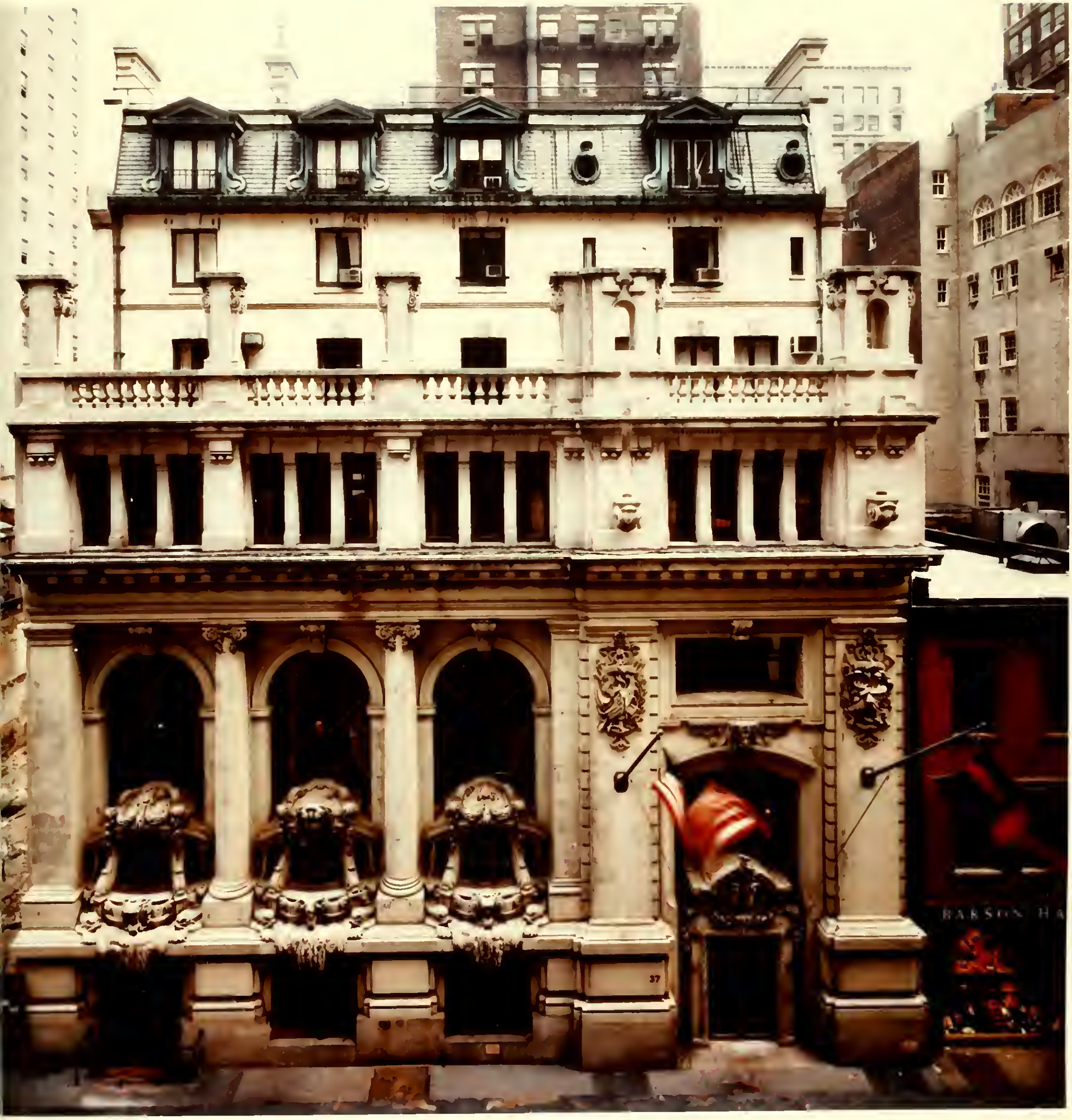
DEAN
TUCKER
SHAW

New York Yacht Club
New York, New York

The New York Yacht Club, built in 1899 by Warren and Wetmore, the architects who designed Grand Central Station, is one of New York City's best known landmarks. This exemplary Beaux-Arts building is known by every passerby for its baroque first floor windows, designed as imitations of Spanish galleon sterns.

Beyer Blinder Belle is modernizing the building's physical plant and restoring the club, inside and out, to its original turn-of-the-century elegance. New mechanical systems, including HVAC and plumbing, will be installed. Exterior work includes cleaning, repointing, and repair of the limestone facade; repair of the copper dormers and slate mansard roof; and repair and replacement of wooden sash and windows. In the interior, function of individual spaces and circulation routes have been changed over the years. Beyer Blinder Belle is working closely with the Yacht Club directors to re-establish room entrances, detailing, focal points, and sight lines in order to restore the functional clarity of the Warren and Wetmore rooms. The Model Room and the cocktail lounge (originally a billiard room) will be restored to their original appearance, and a dome skylight which has been painted over will be cleaned to once again highlight the jewel-like composition of the club's circular cafe.

Client:	New York Yacht Club
Address:	37 West 44 Street, New York
Owner:	New York Yacht Club
Size:	35,000 SF
Const. Cost:	$4.1 Million
Status:	Completion Date 1988



ver
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New York
Yacht Club
Before Restoration

enovation of lwyn Court, New York City:

estoring the Facades & Improving Public Spaces

r. James Marston Fitch, *Director, Dept of Historic Preservation, Beyer Blinder Belle, Architects & Planners*

ban homesteading involving old abandoned brownstones, nversion of manufacturing lofts into apartments, and recling of institutional buildings into living units are all beming popular avenues for expanding the residential base of city or town. Another approach, however, is concentrating improving the existing housing stock to maintain or enhance e liveability of the community. Building owners and velopers in the last few years have rediscovered that rehabilition of large multi-dwellings, rather than razing them and nstructing new apartment buildings in their place, can be onomically attractive if the buildings are still structurally und. In addition, tenants appreciate the spaciousness and aracter that many of these buildings possess. Alwyn Court New York City exemplifies this current renovation trend of odernizing while maintaining the integrity of the building.

Built in 1907-08 by the architects Harde and Short as a -story luxury apartment house, shut down in the mid-30's, and then renovated a few years later, the venerable wyn Court is now being refurbished for its new cooperative vners. By the end of spring 1981, the painstaking physical storation of its ornate terra cotta faces and a number of her significant architectural features, the upgrading of its blic spaces, and the incorporation of various energy saving d safety designs and products will be completed.

Splendid Sense of Visual Drama

Designed with suites of from 14 to 34 rooms, Alwyn ourt's initial tenants found that the building provided the mfort of private houses and the conveniences of apartment rvices – all just a block from Central Park and in the heart the city's music and art community. The exterior beauty of the building was assured by the design of an elaborately molded terra cotta facade with scrollwork reminiscent of the 16th century salamander motif of Francois I.

World War I and the depression greatly reduced interest in such expansive quarters, and by 1936 the last tenant moved out and the building was boarded up. In 1939, an enterprising New York builder undertook to save Alwyn Court from demolition by completely restructuring the interior spaces, retaining only the steel skeleton and exterior walls. The 22 original suites were reorganized to provide 75 manageable 3, 4, and 5-room apartments. Fortunately, the original 10½-foot ceiling height and many of the oversized rooms were held, to maintain the spacious elegance of the apartments. Another change made at that time was the shifting of the building's main entry. The original cast iron doors, however, were moved to the new lobby which was done in Art Deco style.

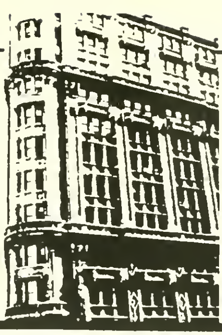
Over the years, the building's interior was fairly well maintained. The exterior did not fare as well. Decades of dirt and grime blackened the ornate facade design, completely obscuring much of the detail. With the recent conversion of Alwyn Court from a rental to a cooperative building, a renovation plan to restore the visual impact of the building and augment the amenities was undertaken, under the direction of Beyer Blinder Belle's Department of Historic Preservation. Because Alwyn Court is not only one of the more unusual apartment buildings in terms of architectural design, but also is a designated landmark, approvals for its renovation had to come from the New York City Landmarks Commission as well as from building owners, architects, and city agencies. The major aspects of the approved program included: conservation by skilled craftsmen of the building's original exterior, refurbishing of the main entry and lobby in a style more appropriate and complementary to the handsome exteriors, and conversion of the interior light court from its previous function as the building's central air shaft to a decorative top-lighted, domed atrium.

eft:
he original building entry which was closed during its 1939 renovaons. As part of the current restoration, the entry will be fitted with plicated cast iron doors and reopened.
ight:
lose-up of terra cotta detailing adjacent to the original entryway.

Achieving a Fresh Old Face

The first step in exterior restoration was the cleaning of the building's glazed terra cotta and cut limestone facades. Resistant to weathering and to pollutants, glazed terra cotta is able to withstand somewhat stronger chemical cleaners than other masonry surfaces. Despite this qualitative fact, it is desirable to establish specific cleaning procedures that are most suitable for the surfaces in question. Therefore, before any actual work took place on the building, a series of tests was conducted by ProSoCo, the manufacturer charged with developing the cleaning materials for the restoration of these facades. The objective of the tests was to determine the best method of removing the layers of accumulated dirt and grime without inflicting structural damage to the building.

During this test phase, several unusual reactions occurred at the building. In one instance, a solvent initially produced satisfactory cleaning results, only to cause a brown discolor-



As part [illegible] restoration program [illegible] Alwyn C[illegible] program [illegible] removal [illegible] facades. When [illegible] cleaning [illegible] could be [illegible] ProSoCo, Inc.

ation of the terra cotta several days later. In another test, no cosmetic damage was noted, but cleaning results were unsatisfactory. "This phase of the operation can be best described as the detective period," noted Gerald E. Boyer, the president of ProSoCo, "for it was only after repeated trial and evaluation that we were able to come up with a cleaning technique that produced the sought-after results, and met with total approval of all concerned parties."

In addition, the Grenadier Corporation, the firm selected for carrying out the cleaning work, discovered that the building had been cleaned previously and probably with a strong acid. Worried that the glazed surface might have been already etched enough to make the terra cotta absorbent, it was decided that all cleaning would be done by hand with a diluted cleaning and rinsing solution applied under moderate pressure.

The condition of the mortar also was examined closely prior to cleaning. Loose panels have been either removed or temporarily held in place by stainless steel dowels and epoxy until repointing is completed.

The cleaning procedures developed specifically for Alwyn Court were:

1. To protect sash and glass from chemical cleaners, glazed window sashes were painted with a latex-like coating provided by ProSo-Co.
2. Surfaces were hosed down with hot water.
3. A diluted alkaline prewash was brushed on with natural bristle brushes. (Nylon brushes wore out too quickly.)
4. After five minutes, the prewash was rinsed off with hot water under moderate pressure and surfaces were scrubbed by hand.
5. An afterwash acid solution – Sure-Klean Restoration Cleaner, diluted from the manufacturer's original strength – was brushed on by hand to return the surface to neutral pH balance and thereby prevent any discoloration from oxidation.
6. The surfaces were rinsed again with hot water under pressure. The crevices of the scrollwork and deep relief areas were scrubbed to remove soil.
7. Latex coatings were then peeled off the windows.

A number of special conditions arose during the cleaning process which were given particular attention. To minimize expense, all cleaning work was done from movable rigged scaffolds. Because the limestone used on the first floor proved to be less impervious than the terra cotta, some modification of the procedures was required. That is, the same cleaning steps were used except that the solution was further diluted and extra water rinsing was necessary to ensure that no damaging chemicals were left on the surface.

Weather conditions slowed the progress of the work. Starting in the late fall of 1979, the wetting and rinsing procedures could be carried out only at temperatures above 40°F. In November and December, work began in late morning and ended by the middle of the afternoon. During high winds, the work halted completely to prevent the prewash and afterwash solution from being blown onto surrounding buildings or passing pedestrians. Such exigencies extended the time required for the conservation work. The specially trained cleaning crews wore wet suits and were protected by both safety belts and lifelines.

Total cost for the exterior cleaning was $50,000, or $2.10 per sq. ft., reflecting the labor-intensive job of cleaning this detailed exterior.

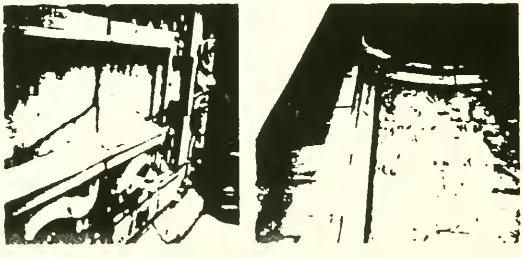
A Helping Hand for Damaged Terra Cotta

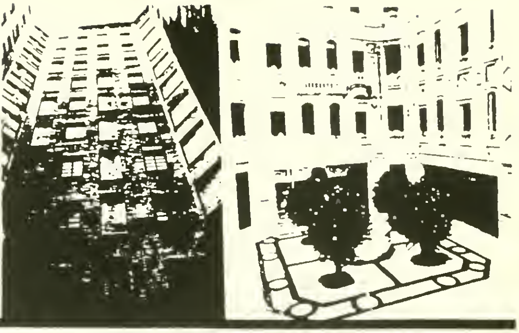
Following the cleaning, the condition of the facades was completely documented in photographs and on a set of elevation drawings in order to describe the extent and location of remedial work required. The terra cotta-coated Alwyn Court displayed the characteristic pathologies of buildings of its age and geographic location: spalled, cracked, stained and crazed vitreous glazing; eroded mortar joints; corroded metal ties and cramps inside the walls. On the basis of a detailed visual examination of every square foot of exterior surfacing, the architects recommended a three-stage conservation program: (1) cleaning all terra cotta surfaces, (2) immediate replacement of all damaged blocks, and (3) an open-ended program of periodic inspection, repair, and replacement on a five-year cycle.

Because of cost considerations, damaged blocks will be replaced with cast concrete facsimiles whose chemical composition and fabrication methods will replicate the original terra cotta in color, texture, and finish. (The originals, incidentally, had a matte, rather than high luster, finish to imitate limestone.) Replacement blocks will be fabricated of 5000 psi concrete using a mix of white Portland cement and light colored aggregate, with no chemical additives. They will be reinforced with 4" x 4" mesh and heavily vibrated for density. Small units will be attached to substrate by cement pargeting on a wire mesh, which is supported by stainless steel pins set in epoxy.

After the initial campaign of conservation, failed blocks will be replaced as failure is detected. It is anticipated that com-

A complete visual examination of the exterior surfaces was conducted, with cracked lintels, failing cement patches, loose spandrels, and other types of failure of the terra cotta cladding fully documented. Damaged terra cotta blocks will be replaced with cast concrete facsimiles which will match the originals in color, texture, and finish.





plete cleaning will not be required for ten years, although more frequent clear-water washing of limestone is being recommended. Such periodic cleaning serves several objectives simultaneously. The first is cosmetic – it restores the building's original light beige color. Second, it affords opportunity for a close visual examination of the fabric. Finally, it removes the dirt and soiling which is often itself an active agent of degradation.

New Spaces in Existing Space

The central courtyard, currently an unused light court, is being converted to a handsome top-lighted atrium. The remodeling of 1939 had left this octagonal shaft surrounded by public hallways at each floor, but closed off by 286 sashes glazed with translucent glass. The renovation involves enclosing this shaft with a pyramidal skylight and removal of all hall sash and wood frames; the embrasures will be plastered. That is, new walls will be recessed into hallways.

The new atrium not only will provide a new focal point, since all interior walls of the atrium will be decorated by the well-known artist Richard Haas using a *grisaille* mural which is a *trompe l'oeil* echo of the building's Francois I exterior, but also will make a major contribution to the building's energy conservation program (described below).

The floor of the atrium and the restored elevator lobby will be paved in patterned marble. An antique fountain, surrounded by tubbed orange trees, will be another feature of the atrium.

A second important "interior" design change focuses on lobby and entry renovations. Alwyn Court's original entryway – a handsome oval lobby – as mentioned previously was closed during the 1939 renovation. It will be reopened for access to new office space being created in the building's first floor and basement. The original cast iron doors will be returned to their former position, with new doors replicated in the same style for the apartment entry. The apartment entry and lobby will be completely furnished and, now open to the atrium, will have another *trompe l'oeil* mural by Haas on the ceiling and new marble paving to visually connect the two spaces.

Comfort and Other Considerations

As in all older buildings, energy conservation was an important consideration in plans for the preservation of Alwyn Court. The building is currently heated by a single-pipe steam system, served by oil-fired boilers. This system is to be retained. There is no central cooling system and none is contemplated. Instead, each apartment will rely on window airconditioners. To assure that these units cause the minimum esthetic damage to the Alwyn's historic facades, the airconditioners will be recessed in the decorative spandrels below the windows in such a way as not to protrude. They will be partially concealed by perforated grilles, molded to conform to the terra cotta bas-reliefs which they replace.

Preliminary Energy Analysis for Alwyn Court

(Typical of the several analyses performed using different values for variables)

Comparison of heat loss (Q) from courtyard elevations:

1. Existing conditions (as was)
2. Scheme as designed (taking out existing walls and having new walls recessed into hallways) no skylight
3. Scheme as designed with skylight

$Q = U \times A \times \Delta T$

where U = thermal transmittance (the quantity of heat in BTUs which will flow through 1 sq. ft. of structure in one hour where there is a 1 degF temperature difference between the air on each side), A = area, T = temp.

U—Values and Assumptions

Windows:
A = 2,880 sq. ft.
U = 1.13 single glazing - metal frame

Skylight:
A = 1,296 sq. ft.
U = .66 with ½" air space — insulation glazing

Wall Assembly - as was: — proposed:
A_1 = 16,704 sq. ft. A_2 = 22,950 sq. ft.
U_1 = .3768 U_2 = .5418

Roof and Skylight:
A_3 = 1,776 sq. ft.
U_3 = .49

Design Data

5100 degree days
Summer ΔT = 89° - 78° = 11°
Winter ΔT = 72° - 15° = 57°

Scheme #1 – Heat Loss from Courtyard Wall Elevations (assumes no insulation in wall assembly) – As Was
Q_1 = .3768 x 16,704 x 57
Q_1 = 358,761 BTU/hr.

Scheme #2 – Heat Loss from Courtyard from New Exterior Walls If No Skylight (assumes no insulation in wall assembly)
Q_2 = .5418 x 22,950 x 57
Q_2 = 708,755 BTU/hr.

Scheme #3 – Heat Loss from Courtyard if Skylight is Incorporated
Q_3 = .49 x 1776 x 57
Q_3 = 49,603 BTU/hr.

Therefore, with the new scheme if a skylight is incorporated, approximately 650,000 BTU/hr. would be saved. (708,755—49,603 = 659,152) In other words, the difference between the new scheme without the skylight and the new scheme with the skylight over a year period would be:

$$\frac{650{,}000}{70^{\circ}\Delta T} \times 28^{\circ} \times 5100 = 1{,}326{,}040{,}800 \text{ BTU/year}$$

where 28° represents the local temperature factor for New York City and 5100 the heating season hours.

This translates into 9,471 gals of No. 2 oil required over the year. However, no boiler can operate at 100% efficiency. Therefore, at a 75% efficiency, 12,628 gals/year are required.

On a cost basis, assuming oil costs $1.00/gal, this would amount to $12,628/year that could be saved in energy costs if the skylight is used.

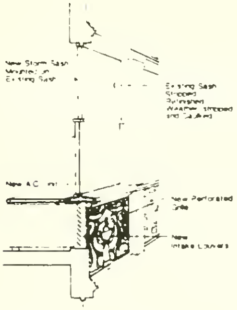
Based on the skylight costing $98,000, the skylight scheme offers a 7.7-year simple payback plus the benefit of all amenities. (All analyses conducted indicated a 7.7—11 year payback period.)

Far Left

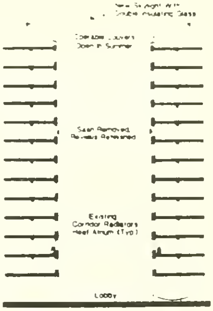
The existing 13 [illegible] energy-saving atrium

Left

A model illustrates how [illegible] with [illegible] painted metal and patterned marble [illegible]



Schematic of airconditioner in spandrel.



Schematic section of the new atrium.

All double-hung sashes will be carefully conserved. They will be removed from their frames, chemically stripped of paint, refinished, and re-puttied on the job. Sash and frames will be weatherstripped and then re-hung. Storm sash of specially detailed, lightweight extruded aluminum frames will be mounted on the inner face of the sashes, designed to rise up and down with them and hinged for washability.

The architects estimate that the conversion of the open air shaft into an enclosed atrium will bring significant energy savings to the building's new cooperative owners. The insulated glass skylight will reduce heat loss from the building by an estimated 650,000 BTUs per hour (1,300,000,000 BTUs per annum). At current prices of oil or steam, it is estimated that construction costs of roughly $98,000 for the skylighted enclosure will be amortized in less than 9 years. (Sample heat loss and cost calculations are given in the accompanying table.) The atrium will not require additional radiation in winter since the opened-up hallways are fully heated. Nor will it require cooled air in summer: comfort conditions will be maintained by the stack effect of opening up the ventilation sash around the base of the skylight.

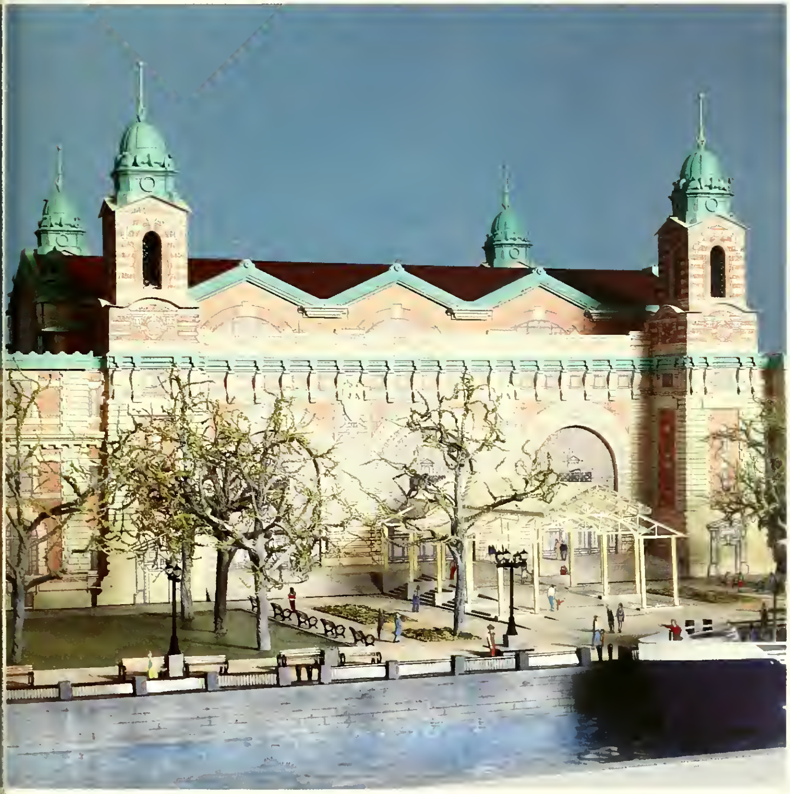
The unusual enclosed atrium space of Alwyn Court has life safety implications as well as energy conservation ones. More specifically, it required special fire safety and exiting considerations. The potential fire and smoke hazards of an enclosed, multi-story interior court are not currently dealt with in the building code, and this building, as well as other atria, is being treated as an individual case. In the event of fire, to keep smoke from accumulating in the atrium and consequently threatening egress, an exhaust system has been developed. Smoke detectors will be placed in the corridors, lobby, and dome, activating the exhaust system automatically in case of fire. The switch, which is used in summer to activate the ventilating system, also can be operated manually in case of fire. As a last resort, fire fighters can crank the dome open from the roof. It is hoped that these new solutions minimizing fire and smoke hazards will help bring about revisions to the building code to the benefit of similar older buildings.

With the completion of the restoration and improvement program for Alwyn Court, the original grandeur of the exterior of this respected building will be recaptured. The interior will be enlivened by new and sympathetic use of space. And the functioning of the building's systems will be compatible with modern requirements for energy conservation and fire safety. ■

is Island
w York Harbor

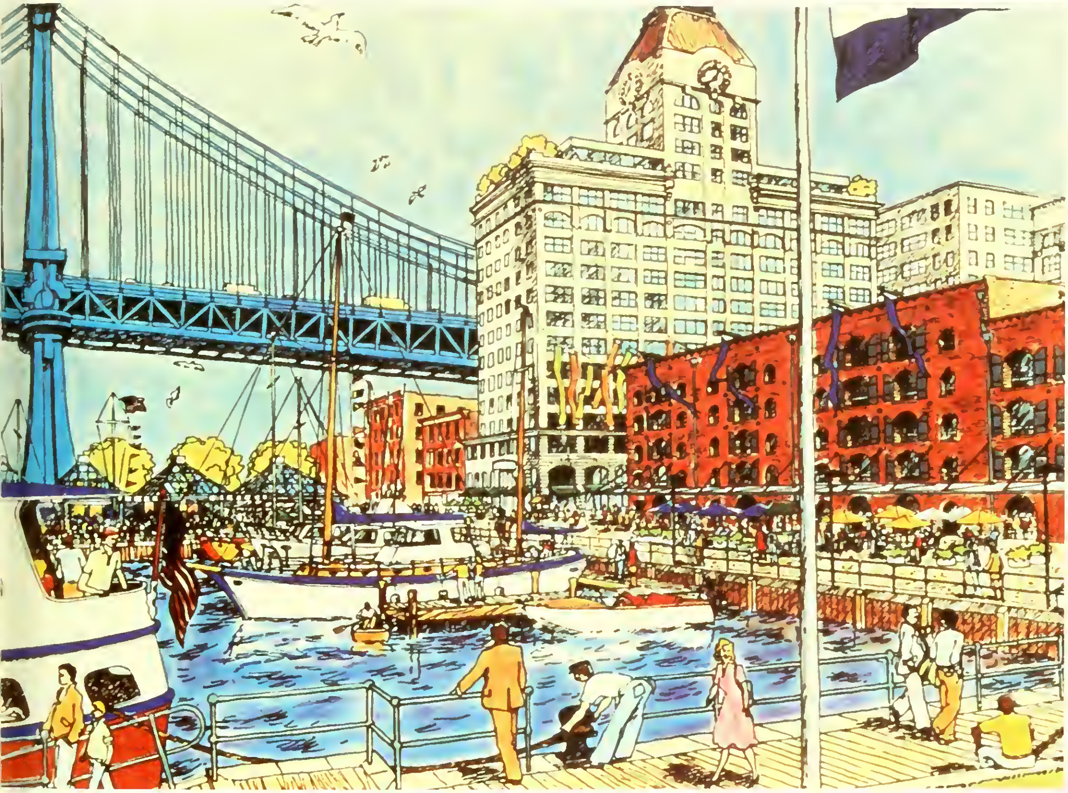
e Main Building of Ellis Island is
e of the most symbolically signi-
ant structures in American his-
y. By 1987, the building will be
tored and renovated for use as a
tional museum of immigration
h exhibits, theaters and a com-
terized genealogy center. Its im-
nse registry room will be pre-
ved as a monument to this na-
n's ethnic heritage. Owner: U.S.
partment of the Interior, National
rk Service.

Client: Statue of Liberty/Ellis Island Foundation, Inc. Cost: Main Building—$40 million; other phases—$80 million.



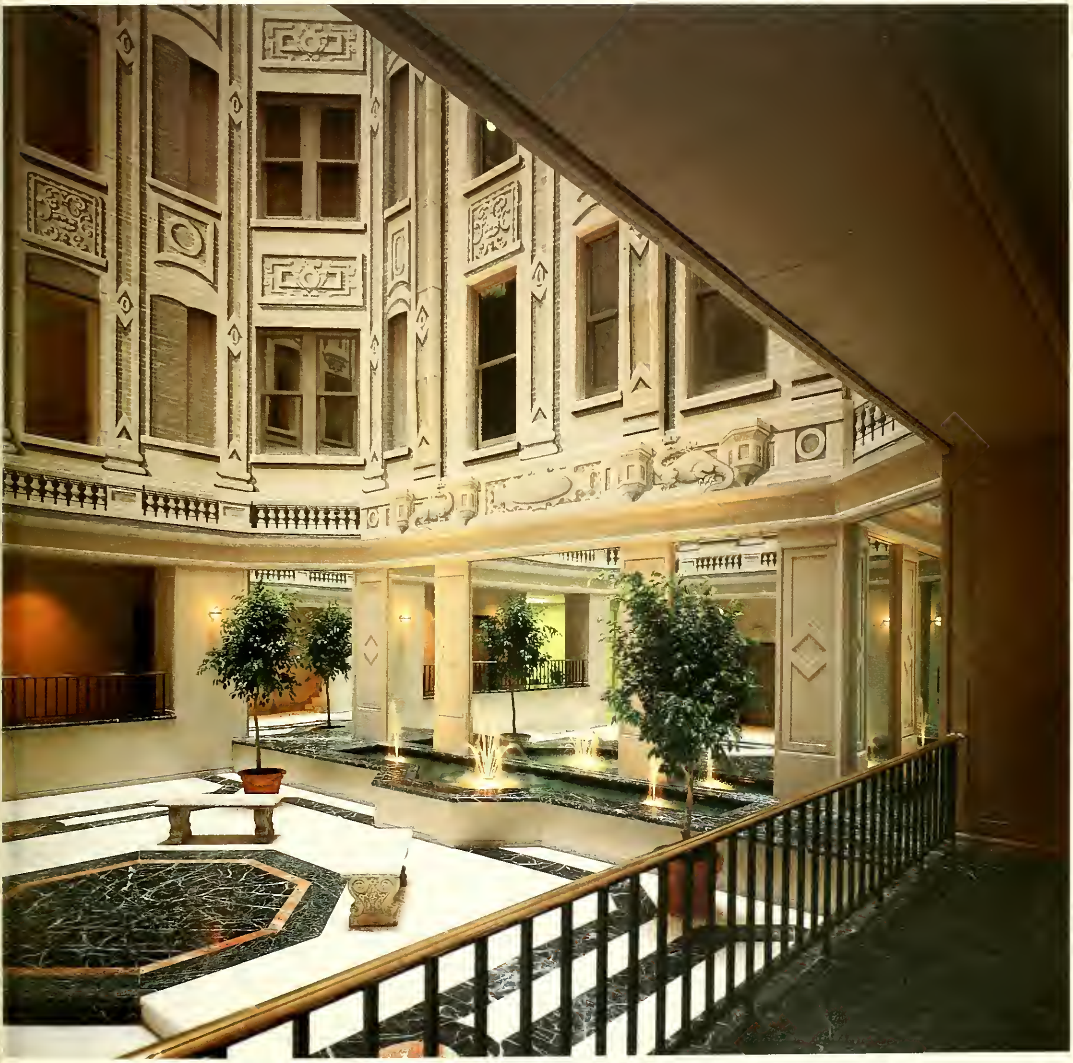
Fulton Landing
Brooklyn, New York

The Brooklyn Waterfront is the spectacular setting for this 35-acre mixed-use retail and office district. The area, which includes virtually the entire area between the Brooklyn and Manhattan bridges, the Brooklyn-Queens Expressway and the East River, has panoramic views of Lower Manhattan. Highlighted by a 100-boat marina and a five-acre riverfront park, the development includes 2 million square feet of office space in the historic Gair and Sweeney buildings and more than 400,000 square feet of shops, restaurants and theaters in the Landmark Empire Stores as well as in a new Pier Pavilion. Client: Two Trees Management Company.

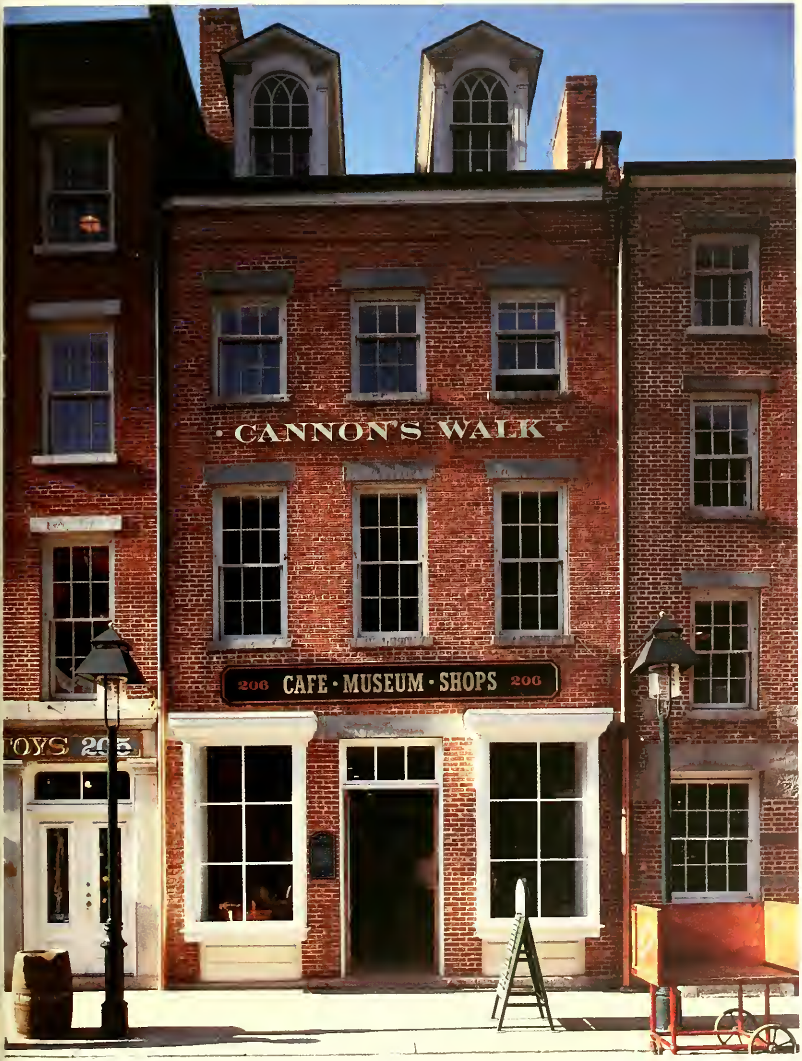


Alwyn Court
New York City

An atrium with a skylight and a rompe l'oeil mural, which echoes the building's French Renaissance exterior, completely transforms a previously dreary and inefficient airshaft. Restoration of this 1908 landmark building includes improvements and modifications of the apartments, refurbishment of public spaces as well as repair, cleaning and preservation of the elaborately carved terra cotta and limestone facade. This project received national recognition and five awards for architectural design, preservation, interior design and use of materials. Client: Two Trees Management Company. Cost: $1.2 million.

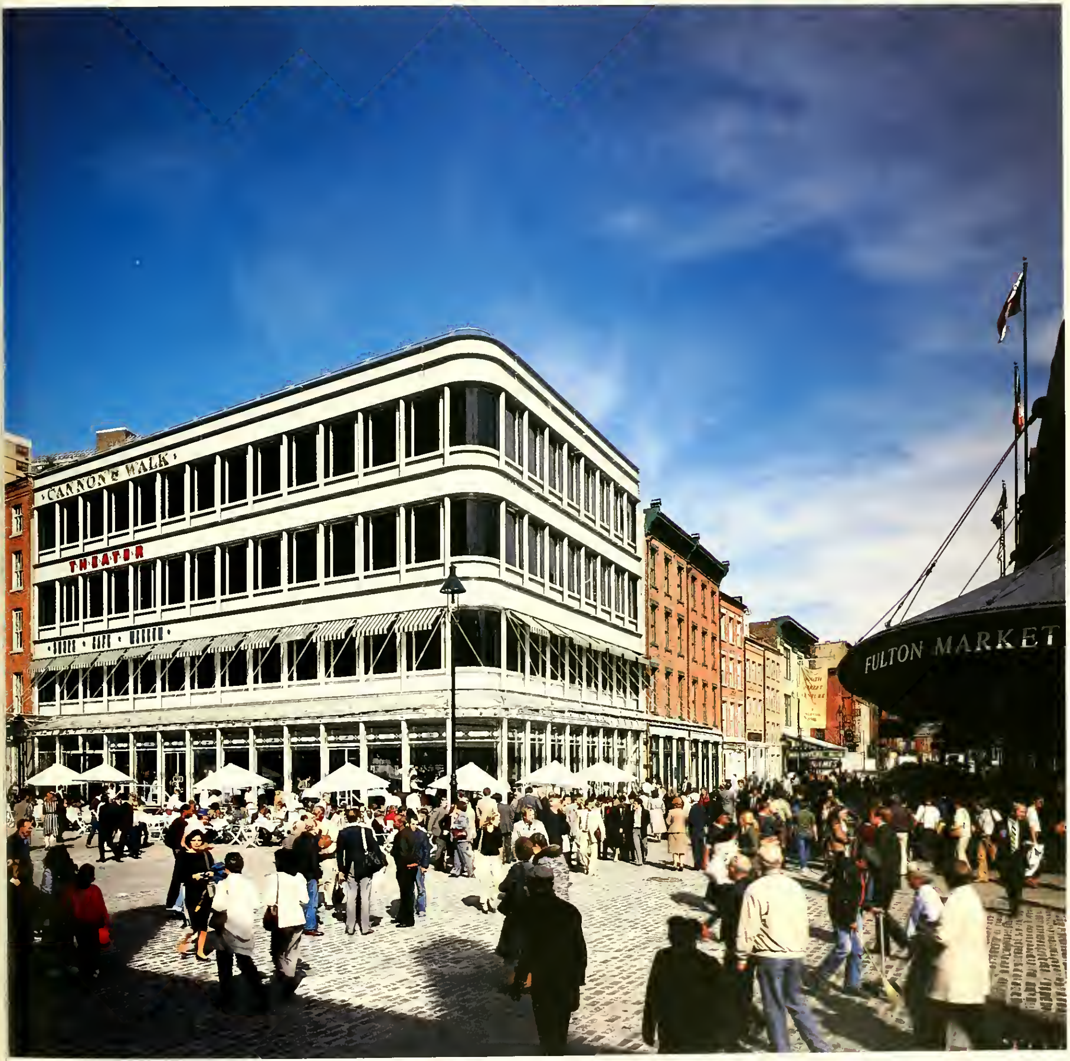


outh Street Seaport
useum Block
ew York City



outh Street Seaport
Iuseum Block
ew York City

he Museum Block, a major historic enter in New York City, is comprised f 13 historic buildings of various rchitectural styles ranging from 790 to 1910. The New Bogardus uilding, a new building in the omplex also designed by Beyer linder Belle, echoes the design of ew York's first cast iron facade. his corner building is a focal point r indoor and outdoor dining and tail activity at the new Seaport omplex. Cannon's Walk, at the center of the Museum Block, previously an underutilized alley, is now a promenade and a bustling retail center. Rental office spaces, the Museum offices and the Rouse Company management offices occupy the upper floors. The Museum Block won six design and preservation awards in 1984. Clients: South Street Seaport Museum, The Rouse Company, New York City Department of General Services. Cost: $4.8 million.



The Limited
New York, New York

The Limited building in New York City is a reconstruction and addition to the original Louis Sherry ice cream parlor constructed in 1928. The original stylized Neoclassical design by the office of McKim, Mead & White was restored in 1985 by Beyer Blinder Belle and now houses three interconnected women's fashion stores.

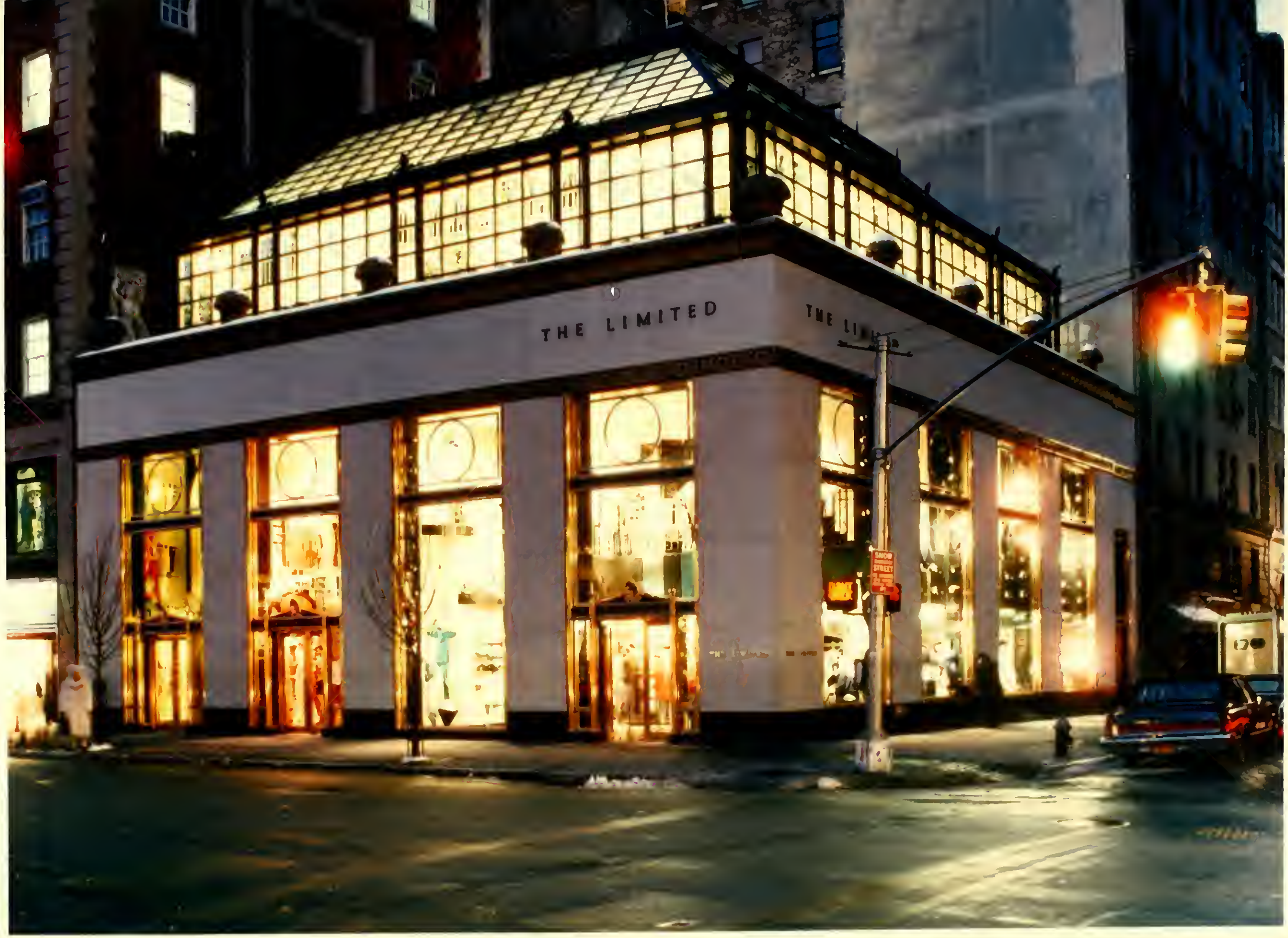
Reconstruction of the building included removal of a later period glass block alteration, replication of the granite and limestone facades and bronze storefronts, and addition of a two-story rooftop greenhouse.

Architectural publications and original construction drawings from the 1920's were researched to develop the reconstruction of the original neoclassical detailing. Stone species and joinery were matched with original on-site samples. Numerous models were produced for the final bronze casting production, and all terra cotta work was repaired and regilded.

Materials include Indiana limestone for the facades, African absolute black granite for the exterior bases and interior stonework, bronze decorative castings and storefronts, polychromed terra cotta friezes and cornices, and glass and aluminum for the greenhouse addition.

The building is located in the Upper East Side Historic District in Manhattan, and is typical of the older, smaller scale buildings of the area. The restoration of this landmark enhances the store's exterior, while the greenhouse addition increases interior space while retaining the traditional scale of Madison Avenue.

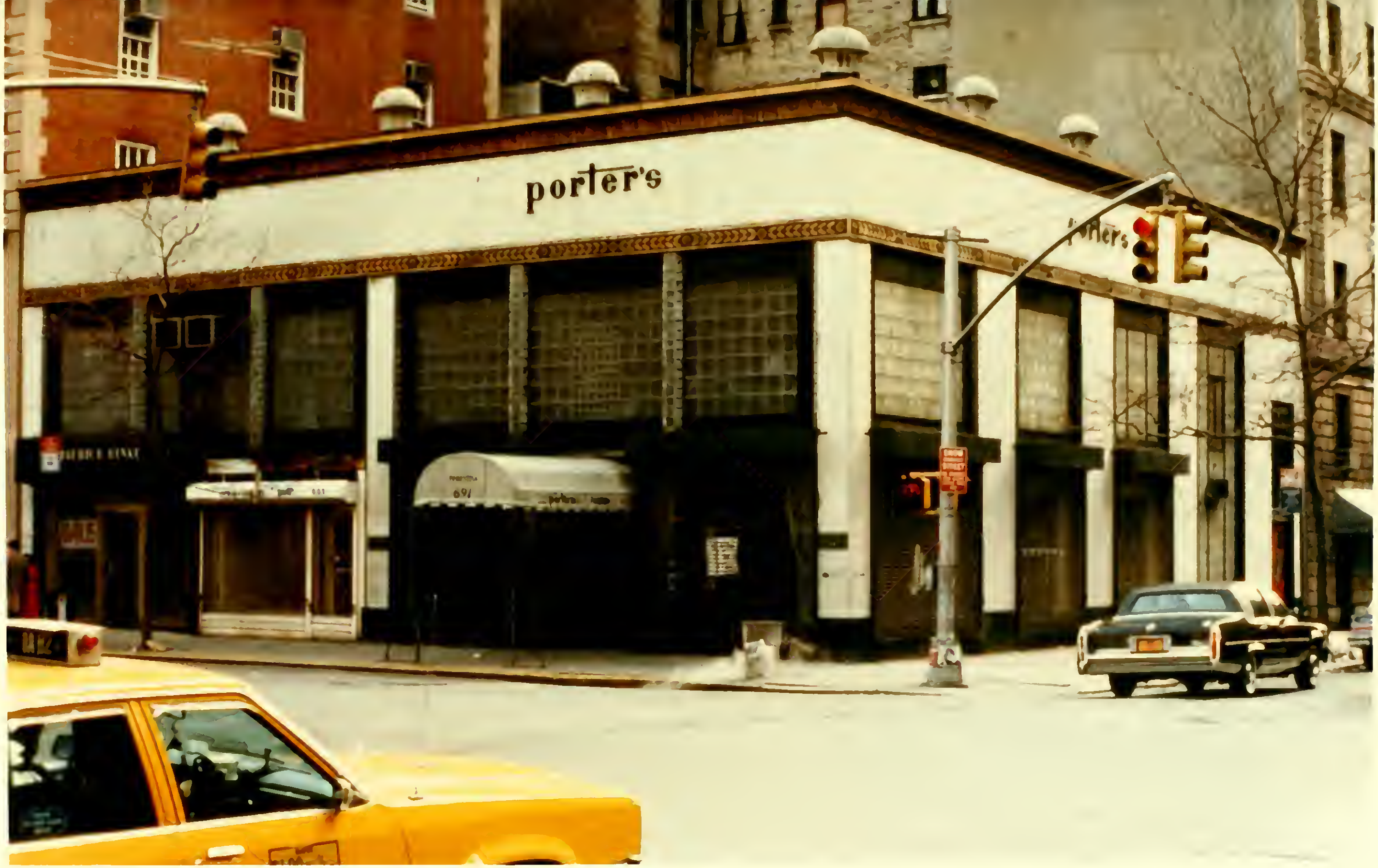
Client: The Limited Stores, Inc.
Address: 691 Madison Avenue, New York
Owner: The Limited Stores, Inc.
Size: 25,000 SF
Const. Cost: $6 Million
Const. Manager: ARCON Properties, Inc.
Major Consultant: W.A. DiGiacomo Associates - Mechanical Engineers
Robert Silman Associates - Structural Engineers
Status: November 1985



Beyer
Blinder
Belle

Architects & Planners

The Limited

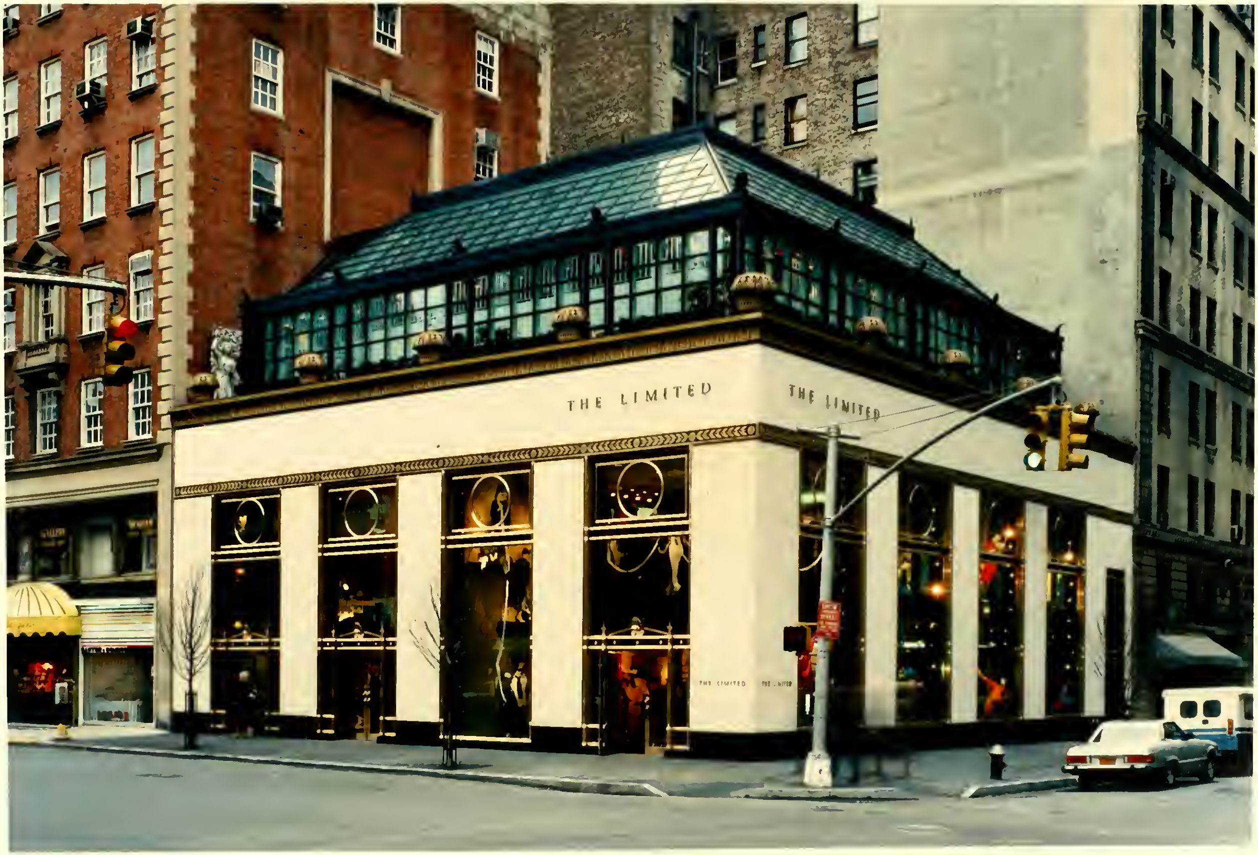


Beyer
Blinder
Belle

Architects & Planners

The Limited

As Found



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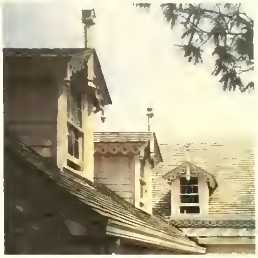
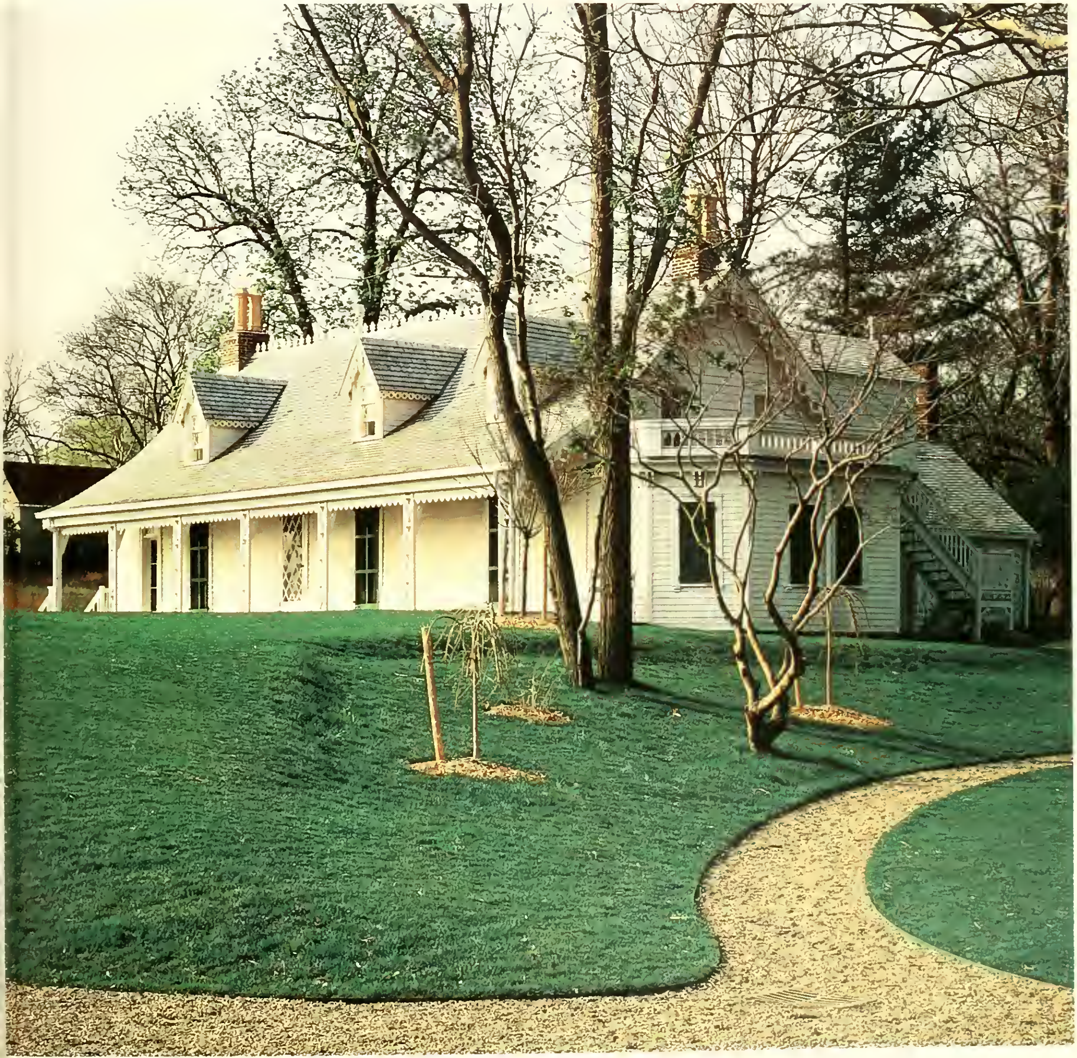
The Limited

Alice Austen House and Grounds
Staten Island, New York

This landmark house belonged to he family of Alice Austen, pioneer photographer of the nineteenth century. With the aid of over 600 Austen photographs, an exterior restoration program has returned he 300-year old cottage from a state of disrepair to the pristine Gothic Revival Style—exactly as it ooked in 1845. Details are carefully in place such as the hand-cut cedar shakes for the roof and the gingerbread details, including tiny bird houses above the dormer windows. The acre of waterfront property is also designed to resemble the original landscape: thickets removed, gravel walkways and steps leading to the seashore installed and five varieties of vines are planted to grow around the columns of the front porch. The house now serves as a museum and study center. Client: New York City Department of Parks. Cost: $1.1 million.





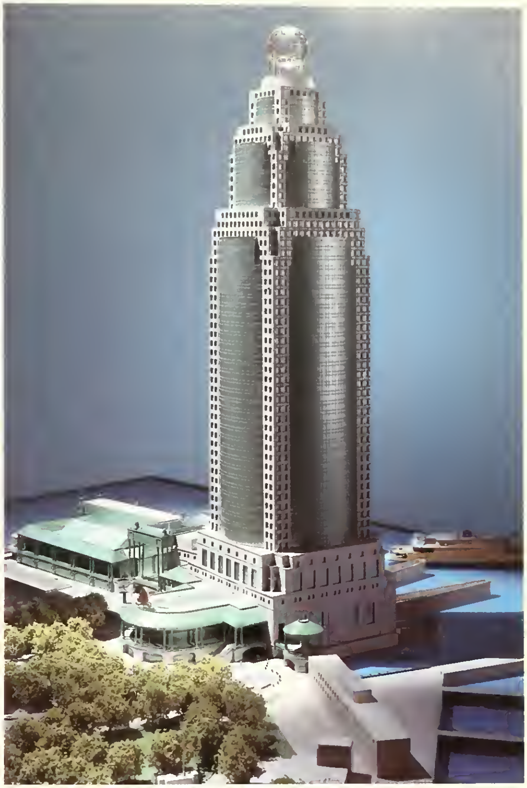
New York County (Tweed) Courthouse
New York, New York

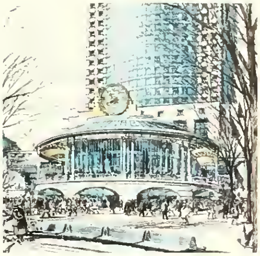
Beyer Blinder Belle's report on the restoration of the Courthouse, a National Landmark built in 1861, defines appropriate methods for its rehabilitation and reuse as an effective public building. An extensive analysis provides details of the existing condition of all architectural elements. The exterior survey involves an inventory of the type and condition of every element of stonework on each facade. The interior survey consists of a room-by-room analysis of all visible and accessible finishes: decorative trim, doors and windows, lighting, and mechanical equipment. Basic architectural character, condition, and approximate dates of changes are noted. The work also encompasses a programmatic analysis of the space needs for typical city agencies and departments, a review of building and energy code requirements, and the building's adaptability to contemporary fire and life safety practices, as well as preparation of budget estimates for construction costs.

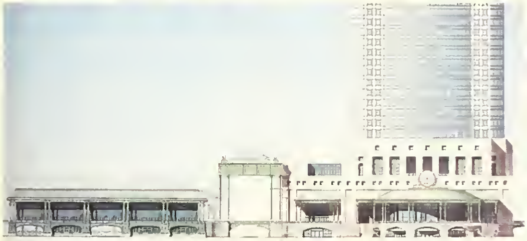
Client: New York City Department of General Services
Address: City Hall Park, New York
Owner: New York City Department of General Services
Size: 215,514 SF
Const. Cost: $30 Million
Status: Completion Date 1990

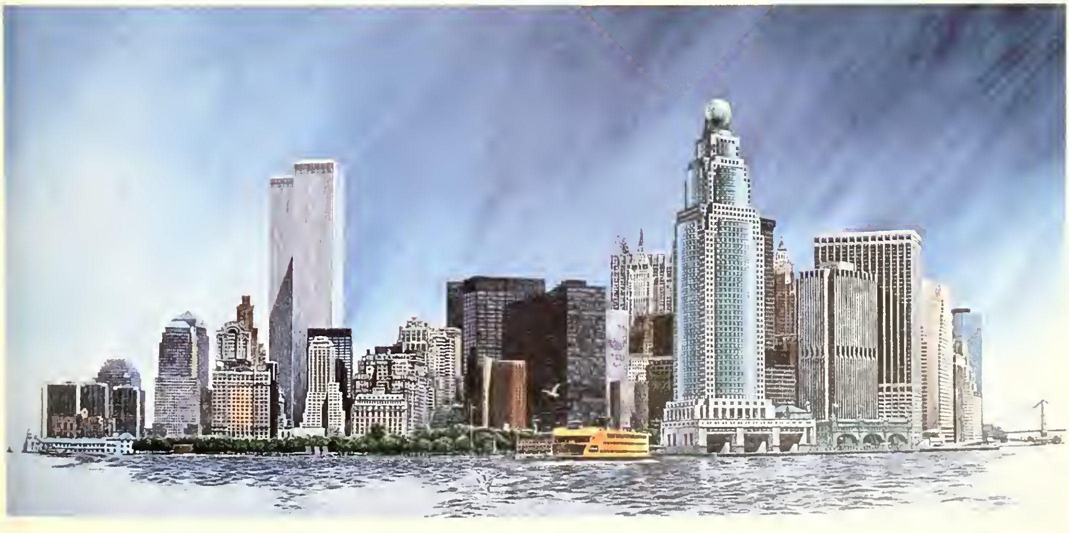
South Ferry Plaza
New York, New York

This Master Plan for a major urban complex on Manhattan's waterfront involves redesign of Peter Minuet Plaza, an intermodal transportation hub; restoration of the Staten Island Ferry Terminal and the Battery Maritime Building, and construction of a new 52-story office tower over the ferry terminal. (Total enclosed area equals 1,630,000 square feet.) The historic Battery Maritime Building is to contain a new hotel and conference center, as well as the existing ferry service to Governor's Island. Restoration includes the metal and glass structure's exterior and the Great Hall interior. The project is a Beyer Blinder Belle/Skidmore Owings & Merrill joint venture. Client: HRO International. Estimated Cost: $500 million.







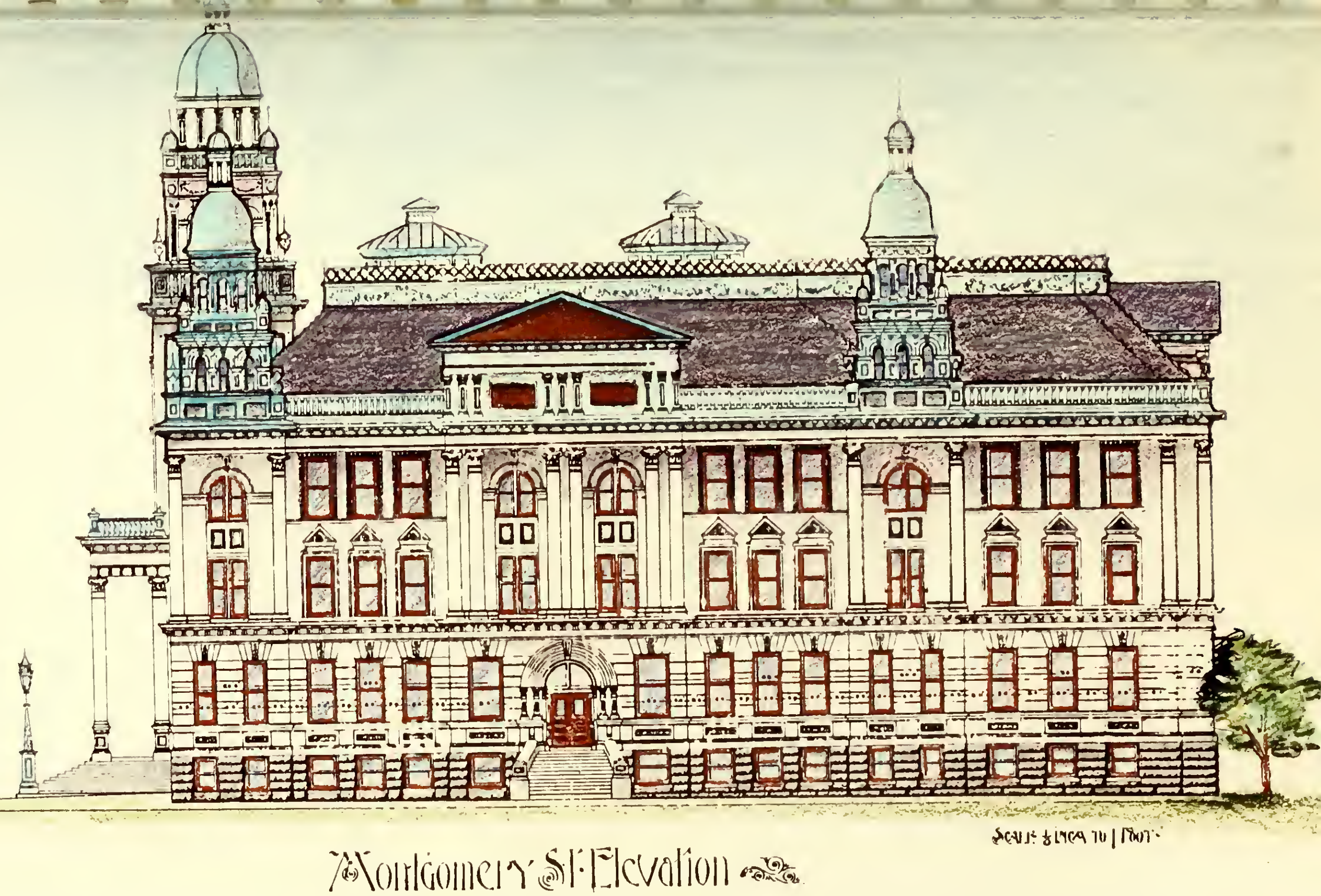


Jersey City City Hall
Jersey City, New Jersey

The project involves a feasibility study for the rehabilitation of the Jersey City City Hall after severe fire damage. Along with recommendations in regard to restoration of the structure, the study includes a comprehensive analysis of space planning and reorganization of administrative offices. The building is on the National Register of Historic Places for both its architectural and historical significance. This late Victorian landmark is now undergoing a phased restoration.

Client: City of Jersey City

Address: Jersey City, New Jersey
Owner: City of Jersey City
Size: N/A
Const. Cost: $275,000
Status: Completion Date 1974



City Hall, Jersey City, New Jersey. After a calamitous fire in September 1979, Beyer Blinder Belle undertook a feasibility study for the restoration of the building, and a comprehensive analysis of space planning and reorganization of administrative offices.

Barneys Women's Store
New York, New York

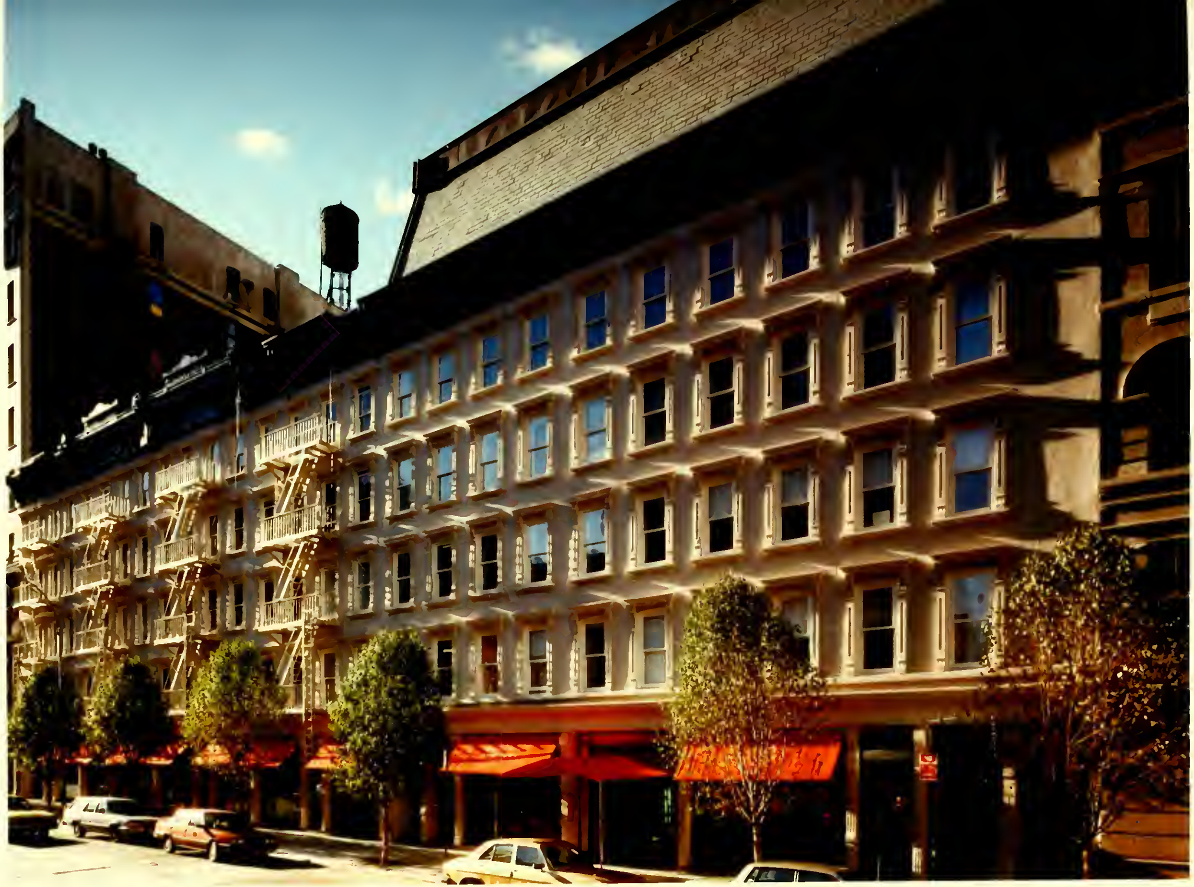
Spacious and light-filled, Barneys Women's Store is the largest women's store built in New York in over 50 years. At one end of the main floor, an art deco oval staircase sweeps up six stories to a frosted skylight. In the center of the floor, a two-story atrium overlooks a terazzo fountain and a cafe trimmed in wood and faux marble.

The oval stair affords long, oblique views between floors and opens at each level into a different design theme. Individual boutiques surround the staircase on each floor, a scheme reminiscent of Galleries Lafayette and Printemps--Parisian department stores built in the early part of the century.

The store occupies a space created by the conversion of six 1880's brownstones, with the the facades of the townhouses serving as the storefront. The domestic scale of the facade echoes the personal feeling of the small boutiques which make up the store.

Joseph Giovannini, in the New York Times, called the store "urbane, fun, stylish and faintly 30's." He continued, "if Fred Astaire and Ginger Rogers were to meet on this staircase, they would dance."

Client:	Barneys New York
Address:	17th Street and Seventh Avenue, New York City
Owner:	Barneys New York
Size:	65,000 SF
Const. Cost:	$25 Million
Status:	Completion Date 1986



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Barneys Women's Store

Denver Arts Center
Denver Colorado

Beyer Blinder Belle is responsible for the master plan and completion of the Denver Center for the Performing Arts. The design includes complete exterior restoration of the historic Auditorium Theatre built in 1905 to house the Democratic National Convention. When completed in 1990, the complex will accommodate nearly 10,000 patrons in seven different theaters and concert halls, establishing Denver as one of the largest and foremost performing arts centers in the United States.

A major new 2,800 seat theater, specifically designed for Broadway shows and national touring ballet and opera companies, will be created by entirely restructuring the existing Arena building. The historic Auditorium will be converted into a state-of-the-art 1,500 seat theater for local productions.

The design also includes facilities for the National Theater Conservatory which will become the focus of daytime activity at the center. Dance and theater rehearsal studios, classrooms, and administrative offices will accommodate 300 students, faculty members, and administrative personnel of the Conservatory.

Improved circulation, service facilities, and a newly extended lobby will enhance Boettcher Concert Hall, home of the Denver Symphony Orchestra.

The vital link for all theater buildings and the 1,750 car parking garage is the 90 foot high, 500 foot long, glass-vaulted galleria which acts as the pedestrian walkway through the core of the complex. The galleria will be fully enclosed and environmentally tempered to act as the central lobby for all performance spaces year-round. Theatrical lighting and new and expanded restaurant and retail spaces will create a dramatic atmosphere within the galleria for daytime and evening gatherings -- a destination point in the heart of downtown Denver and a symbol of the arts throughout the region.

Client:	City and County of Denver
Address:	Denver, Colorado
Owner:	City of Denver
Size:	230,000 SF
Const. Cost:	$31 Million
Major Consultants:	van Dijk Johnson & Partners - Associate Architects KKBNA - Structural Engineers Flack & Kurtz - Mechanical/Electrical Engineers Roger Morgan Studio - Theater Consultant
Status:	Completion Date 1990

Denver Arts Center
Denver Colorado

Beyer Blinder Belle is responsible for the master plan and completion of the Denver Center for the Performing Arts. The design includes complete exterior restoration of the historic Auditorium Theatre built in 1905 to house the Democratic National Convention. When completed in 1990, the complex will accommodate nearly 10,000 patrons in seven different theaters and concert halls, establishing Denver as one of the largest and foremost performing arts centers in the United States.

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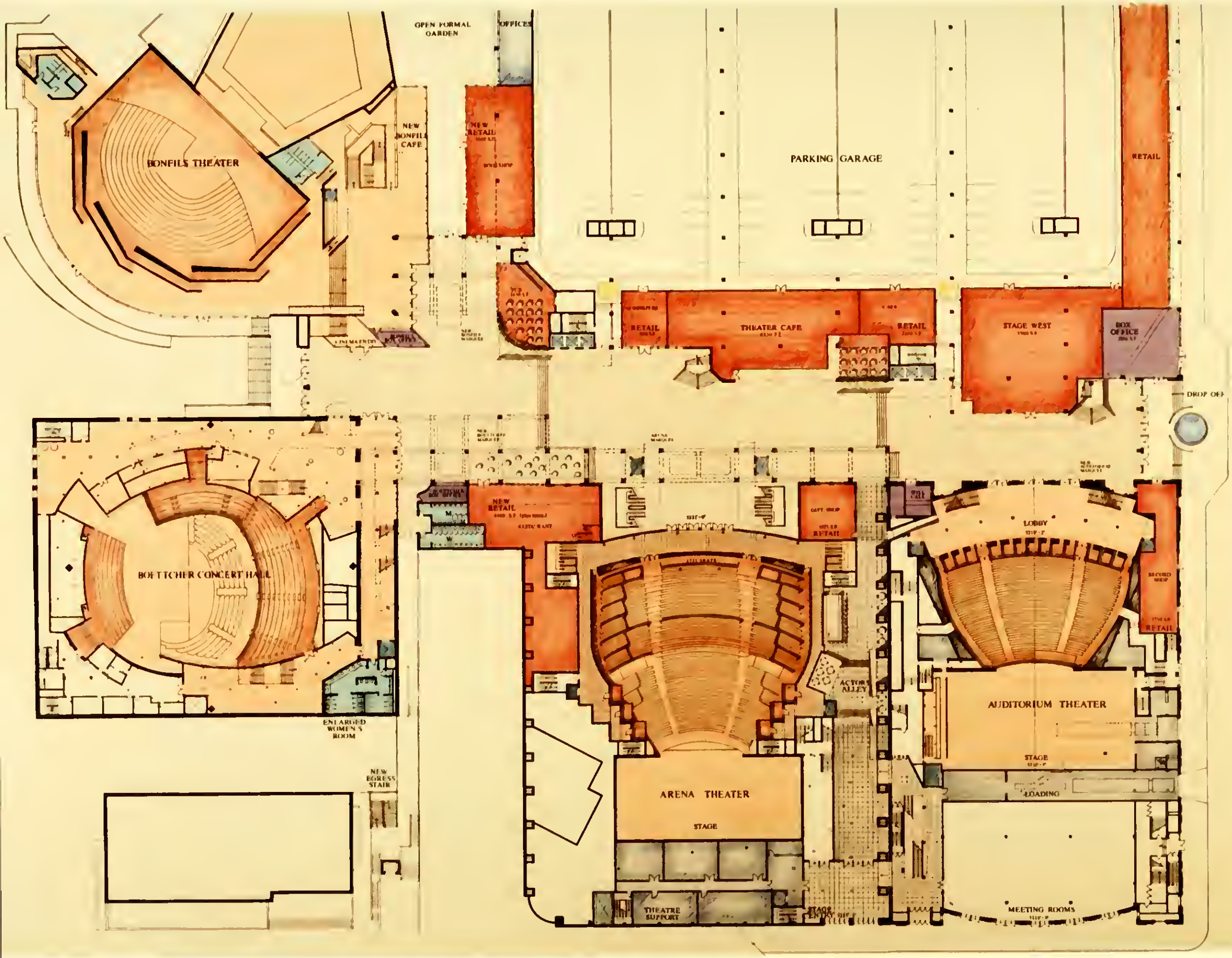
DENVER ARTS CENTER

MASTERPLAN



SCHEMATIC DESIGN

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Beyer Blinder Belle,
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van Dijk Johnson and Partners,
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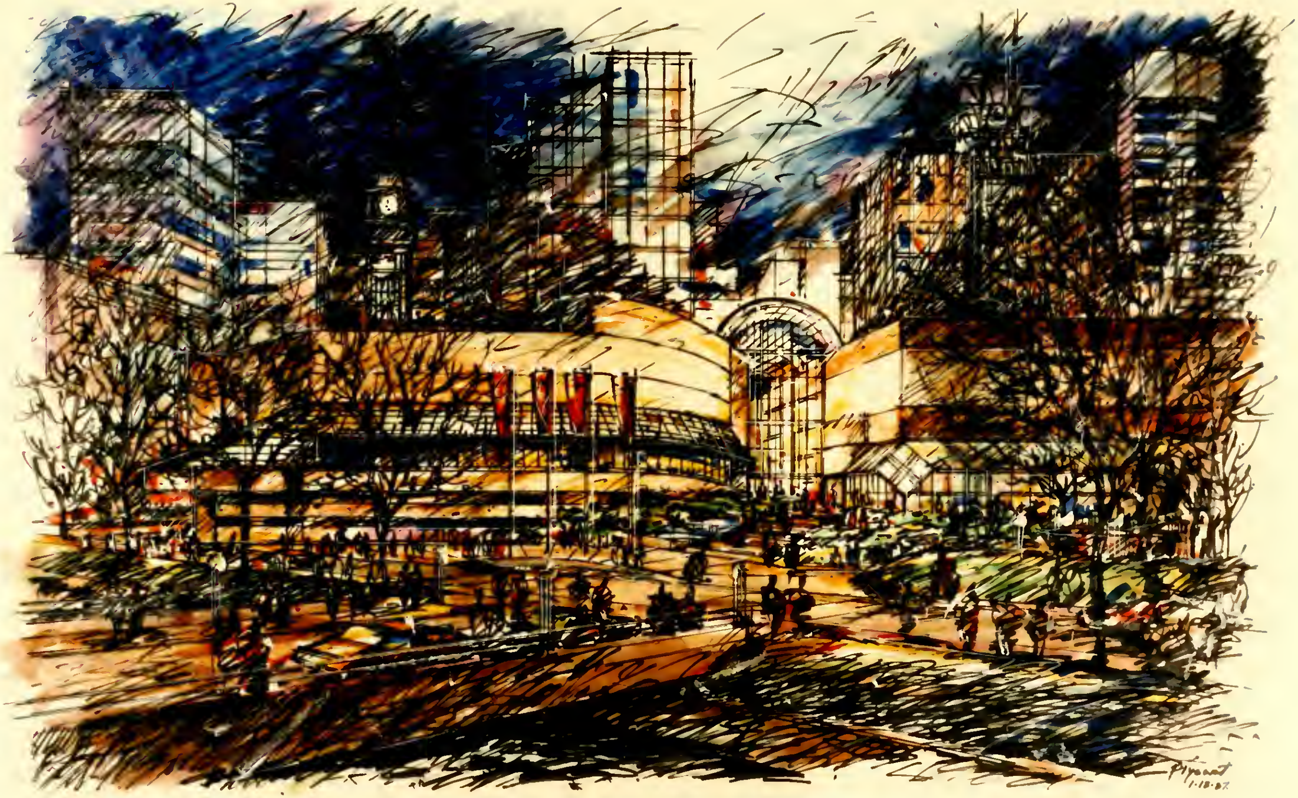
GALLERIA PLAN



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Denver Arts Center

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